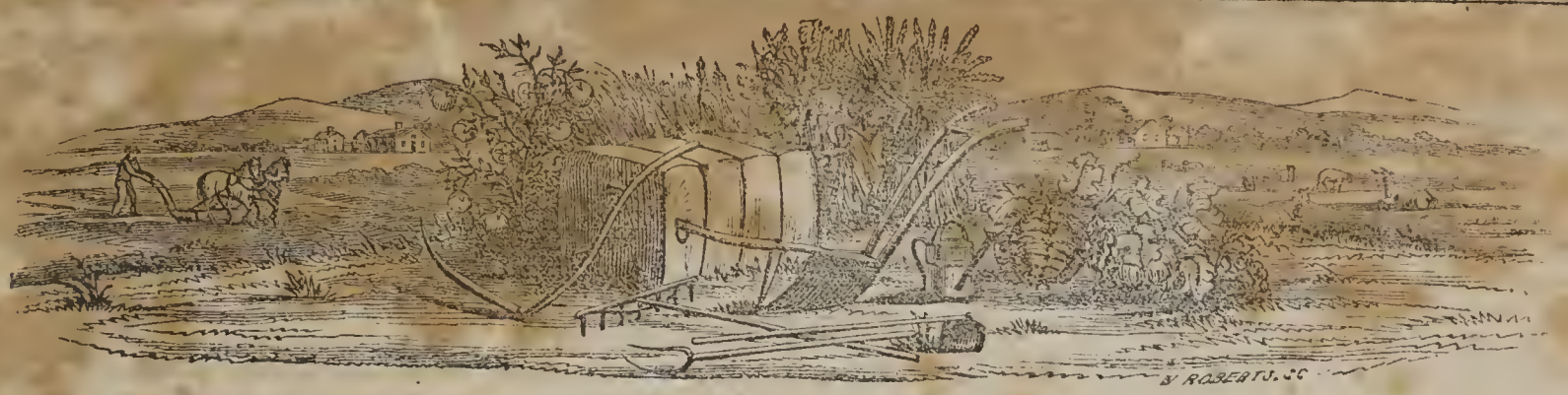


FARMER AND PLANTER.

VOL. I. PENDLETON, S. C., APRIL, 1850. No. 2.

AN ADDRESS

Delivered before the Anderson District Farmers' Society, at Anderson C. H., S. C., on the 21st Nov. 1849,

BY DR. O. R. BROYLES.

Revised and corrected for the Farmer & Planter.

[CONTINUED.]

The next step in our progress would seem to be indicated by the preceding measures, and consists in *the adoption of a scientific rotation of crops.* And whilst the advantages that result from it, come within the reach of common observation, yet it must be confessed that the practical application of the principles involved is one of the most embarrassing subjects in the whole range of the physical sciences.

It is a fact known to almost every one, that plants cultivated for a number of years on the same plat of ground gradually detereorate and decline, whilst the land by substituting another species of plants, is still capable of affording remunerating crops. The reason commonly assigned for the difference has been that the first crop had deprived the soil of most of the kind of nourishment suited to its growth, without drawing on those other stores required for the support of another, and different species. But this explains only a part of the mystery. The progress of science in unraviling the mysteries of vitality, and organization, has established the fact, that there are other and hitherto occult influences at work in the process. The science of vegetable physiology, now scarcely less understood than that of the human, has long since established the fact, that plants, like men, have in addition to a digestive-aparatus through which they are sustained and developed, also a system of excretorey organs, through which, as through the emunctories of the human body, all noxious substances, and such as are insusceptible of assimilation, are expelled by their roots.

From this view of the subject, the causes of decline, when crops are made to grow too often on the same land are found to be, at least two in number. First, a progressive diminution of the sort of nourishment suited to their wants, and secondly, because they are injuriously affected by their own noxious excrements diffused in the soil. But the question here presents itself, how is another kind of plant to thrive in a soil thus contaminated! why are they not also injuriously affected! And here we stand upon the confines of one of the most interesting, and unexplored fields in the mighty works of nature. The whole theory of the vegetable excretions and their influences on soils and vegetation must enter into the account in solving this hitherto mysterious paradox.

The experiments of Macaire Princep have shown conclusively, that the excrementitious matters discharged from the roots of plants, grown repeatedly on the same soil, though highly injurious to them, are nevertheless capable of being assimilated by the organs of a different plant, for which it serves as food. "He found that the water in which plants, as the family of the Leguminosa were grown, acquired a brown color. Plants of the same species placed in water, impregnated with these excrements, were impeded in their growth, and faded prematurely, whilst on the contrary, corn plants grew vigorously in it, and the color of the water diminished sensibly, so that it really appeared that a certain quantity of the excrements of the leguminous had really been absorbed by the corn plants. These experiments afford as their main result, that the characters and properties of the excrements of the different species of plants, are different from one another, and that some expel excrementitious matter of an acrid and resinous character; others mild substances resembling gum. The former of these, according to Macaire Princep may be regarded as poisonous, the latter as nutritious." Again, "it is scarcely necessary to remark, that the excrementitious matter must undergo putrefaction, and decay, by which means it is converted in whole or in part, into a substance which supplies the place of humus, by being a constant source of carbonic acid."

"The quickness with which this decay of the excrements of plants proceeds, depends on the composition of the soil, and its greater or less porosity. It will take place very quickly in a calcareous soil, for the power of the organic excrements, to attract oxygen, and to putrefy, is increased by contact with alkaline constituents, and by a porous soil which freely permits the access of air."

Since, then, a complete decomposition of these excrementitious matters, discharged from the roots of any one species of plants, is indispensibly necessary to the successful cultivation of it on the same land again, the interval at which it may be again introduced in the rotation would seem to be limited by the time required for their complete decay.

"In some neighborhoods clover will not thrive till the sixth year, in others not until the twelfth. Flax in the second or third year. All this depends on the chemical nature of the soil, for it has been found by experience that in those districts where the intervals at which the same plants can be cultivated with advantage are very long, the time cannot be shortened by the most powerful manures.—The destruction of the peculiar excrements of one crop must have taken place before a new crop can be produced."

"The observations of the writer go to show that the time required for the conversion of the excrementitious substances into humus, is different with different plants, and that the use of alkalies and burnt lime, or ashes not lixiviated, must enable a soil to produce the same plants in a much shorter time."

Again, "We can scarcely suppose a better means of producing humus than by the growth of plants, the leaves of which are food for animals, for they prepare the soil for plants of every other kind, but particularly for those to which the presence of humus is the most essential condition of growth."

"The reasons why this interchange of crops is so advantageous—the principles which regulate this part of agriculture, are, therefore, the artificial production of humus, and the cultivation of different kinds of plants upon the same field in

such an order of succession that each shall extract only certain components of the soil, whilst it leaves behind or restores those which a second or third species of plant may require for its growth and development."

From this highly interesting examination of the secret influences that modify and control the growth and development of the vegetable kingdom it is at once apparent to all, that we have not taken the first initiatory step in the important policy of rotation. Certainly none having the slightest reference to the principles involved in this interesting inquiry. We are all sensible of the rapid decline of our best lands under a continued succession of [illegible] and have universally ascribed it to a failure in the requisite amount of nutriment in the soil. But that lands thus abused may be made to yield profitable crops by adopting a proper rotation, especially with intervals of rest for the purpose of effecting the destruction and conversion of the excrements of the various plants, is a matter whose novelty is only exceeded by its interest and importance.

I am aware that it is generally expected from one who has the temerity to assail the plans and practices of the whole country, that he should be prepared to point them to the rightful policy. In this instance I frankly confess my inadequacy to the task. But I will nevertheless not quail beneath the weight merely of implied responsibility, but proceed at once to suggest a rotation of crops, which, though far short of what would be necessary to a highly ameliorating system, will nevertheless do to commence with, and without a doubt introduce progressive improvement of our lands.

I would then advise at the outset the four-field shift, with exclusive reference to our four principal agricultural products—cotton, corn, oats, and wheat, to be cultivated in the order I have named them. All experience goes to show that corn is grown most successfully after cotton. The policy of the next step may be questioned by many, but to my mind it is both clear and convincing. Corn is beyond all question a great exhauster, and nothing has so often disappointed the wheat grower as the plan commonly adopted of sowing wheat after corn. Oats on the other hand, is a much surer crop, and seldom fails to yield well after any of the tillage crops. By this plan then, we can grow successfully three of the crops in question, and the chances of a good wheat crop after oats, with the advantages derived from turning in the stubble, weeds and grass have become much more flattering. Wheat after oats, is the plan most commonly pursued in a large portion of the most highly improved sections of the Southern States. Nor can I entertain a doubt but that by turning again the wheat stubble early in the fall, the land would be admirably prepared for the succeeding cotton crop.

But a still more favorable plan, and one that would scarcely fail to confer most distinguishing advantages would be to give a year's rest after wheat, and turn in, the fall, the annual yield of all its vegetable materials. On this subject Liebig states, "that a soil lying fallow owes its earlier fertility in part to the destruction or conversion into humus of the excrements contained in it, which is effected during the fallow season, at the same time that the lands are exposed to a further disintegration."

The great difficulty in the way of entering upon a regular rotation of crops, arises from the tenacity with which we cling to former practices.

But the plan I suggest, if properly considered, involves no sacrifices. Under the four-field shift every acre of the farm is made to yield its annual return. And where a year of rest is allowed, it is but one in five, and the increased yield the succeeding year, would afford ample compensation for the interval. The great advantages to be derived from fall and winter plowing, and turning in of vegetable matter as manure, so strenuously urged upon your attention before, would be placed fully within our reach under this rotation, as one half of the entire farm would be covered in the fall of the year with stubble, grass and weeds.

But there is another surpassing advantage secured by turning in the fall—its tendency to destroy the ova or germs of insects, which no doubt prove much more destructive to our crops, and especially corn, than is commonly imagined. In the Western States they never risk corn after clover, unless well turned in the fall. Nor can there be any doubt but that the yellow and sickly appearance of our corn crops on weed and stubble lands, especially in the early part of the season, is owing to the depredations of insects on its roots.

But there is another, of the four prominent measures, on which my hopes of improving the country mainly depend, and which consists in the addition of manure in such quantities annually, as to afford reasonable remuneration, and a progressive improvement of the lands, to accomplish which, a total revolution of the practices of the whole country is absolutely necessary. As to the ordinary mineral manures, as lime, marl, gypsum and guano, we may probably never be able to obtain them at sufficiently moderate cost, even with the advantages of rail road transportation, and all experience goes to show that gypsum in the absence of lime affords not the slightest advantage, even to a crop of clover. This state of things necessarily limits our operations in manuring to compost, with the proceeds of our stables, stock-pens and barn-yards.—And to the more enlarged, and as I conceive, much more extensively remunerating process of growing crops, to be given to the land, and especially the turning in of all the spontaneous productions of our stubble fields and waste lands. As respects the first, the advantages to be derived from stock-pens, and the accumulation and conversion into manure all kinds of vegetable matter by compost, the subject is well understood, and has been so ably treated by Dana, Bommer, Baussengault, and others, whose works are in the hands of so many of our citizens, that I should deem a further discussion on the subject a trespass on your time, and a tax upon your patience. But in respect to the policy of manuring lands by re-applying and turning into them their own vegetable productions, though based upon the clearest indications of reason and common observation, it has been almost totally neglected in this country, where of all others, by reason of the abundance of land, it may be pursued with the greatest advantage.

It has been already shown, that in addition to the amount of mineral manure in the soil at a given time, additions thereto may be made by exposing the subsoil to atmospheric influences by very deep plowing. But lands cannot be made productive simply by mineral manures. Much the largest portion of the food of plants is derived from the decomposition of animal and vegetable substances, for they are convertable terms. "All flesh is grass, and where grass most abounds, there will flesh also." A plan by which the largest amount of vegetable mould can be imparted to the soil in the shortest time, and at the least expense, is the very desirable object we have in view, at this stage of our progress.

In all limestone regions, where this mineral abounds sufficiently in the soil, the means of improving lands with unparalleled rapidity is presented by turning in the red clover. When plastered and applied in this way, its effects are truly magical. But as it is a question whether the clover can be grown here, especially upon our uplands, with sufficient luxuriancy to make it valuable as an improver, I do not feel justified at present in soliciting confidence in its favor. In the pea, however, we have an excellent substitute, and one that suits both our soil and climate, and which in proportion to the amount applied is no doubt as highly fertilizing as the clover. To the extent therefore that the pea can be grown and turned into the land, the labor bestowed will be most amply compensated. But unfortunately, this crop, especially upon our uplands is often almost totally destroyed by drought at some period of the season.

But, although the clover and the pea are regarded as the best improvers, by reason of a physical peculiarity which consists in their deriving their principle sustenance from the atmosphere, yet they are not the only improvers. Every weed, and plant, and blade of grass abounds in those elementary materials that sustain our crops, and are again susceptible of being modified by the digestive organs of animals so as to form blood, muscle and bone. All plants derive their nourishment from two sources, the earth and the atmosphere. If it had been otherwise, and the whole supply had proceeded from the earth exclusively, exhaustion from tillage must have ensued much more rapidly. If from the atmosphere alone the converse of the proposition would have no doubt been the result, and lands would scarcely ever have been impoverished from this cause. It follows, therefore, as a necessary consequence, that

where a plant is grown upon the soil and turned into it, the amount of its organization, derived from the atmosphere, is a clear gain to the land. Every weed and plant decomposed upon the spot on which it was grown increases its fertility. And this at once indicates the immense advantage that must result from the practice of turning in the whole amount of weeds and grass which annually cover our stubble fields and waste lands, vastly increased as they would be under a judicious rotation of crops.

There are some I am aware who are opposed to turning up and mixing the surface with the subsoil, under any circumstances, than which nothing is better calculated to exercise a retarding influence over agricultural improvement.—That turning at the outset a very large amount of the subsoil on thin lands would render them less productive, for a time, there can be no question. The amount of humus, an indispensable constituent in all soils, would be too inconsiderable at first. But if a coat of stubble, weeds and grass was turned into such lands, especially in the fall or winter season of the year, by a succession of plowings, each a little deeper than the one preceding, this essential material would soon be imparted, and the road to progressive improvement clearly marked out.

Nor is it less common to meet with objections to turning lands in the summer months, based on the conclusion that its fertility is greatly impaired by exposure to the heat of the sun, and this too, by those who regard the subsoil as a perfect *caput mortuum*, or mass of dead earth — But their theories do not appear to me to harmonise with the known facts of the case. If the subsoil was really barren and unproductive as they suppose, it would seem to argue that there could be little or no risk of injury to it from the heat of a summer sun; and on the other hand if the principles of productiveness were confined to the surface only, turning it over and covering it with the barren earth on which it rests, would seem to be the best plan of avoiding the evil.

But there is another view of the subject which would seem to be at once decisive of the question. It is acknowledged, by all, that the mischief resulting to our lands from the prevalence of solar heat, is mainly owing to the more rapid consumption of the vegetable mould in this than in higher northern latitudes, and as the entire amount of this very valuable material is confined to the surface alone, turning it under must be the best possible plan of obviating the evil, and retaining it in the soil; whilst the subsoil containing little else than the mineral constituents, which are less likely to consume or evaporate, remains comparatiely uninjured. I regard the objection as well nigh groundless, and the evil in question, if any exists, as dust on the scales when compared to the great benefits that must result from turning occasionally in the summer months, as the only means we have of ridding our lands of noxious plants and weeds. But independently of this policy with the usual objections to it, based on our high southern latitude, turning during the fall and winter months meets the views of all parties, and the amount of weeds, grass and stubble on all our farms is sufficient to give ample employment throughout the season, and in no way can the same amount of labor, in my humble opinion, be more amply compensated.

There is nothing more common than to witness the most persevering and prolonged exertions on the part of highly intelligent planters, to collect oak leaves, pine straw, et cetera, from a distant forest, to be put in pens, to be decomposed, and hauled on the field again, (the last and least part of the labor), and this, too, on farms where large fields have lain at rest, and immense stubble lands densely covered with weeds and grass, which could be turned-in with one-tenth part of the labor, and prove more remunerating than a heap of oak-leaf compost mountain high.

There are some I know, and especially those who occupy a position of ultraism in respect to the doctrine of surface manuring, who prefer to leave the grass and weeds upon the surface, to be plowed in as the lands are broken in the spring.—But it is a policy not only at war with the most approved theories, as to the application of putrescent manures, but also with the light which experience has thrown around the subject. Lime is confessedly one of the greatest solvents of vegetable matter peculiar to soils, here and elsewhere, and yet in limestone regions and where the lands are very highly calcareous, it is the universal custom to turn in their clover, and every variety of vegetable matter early in the fall season preparatory to the succeeding corn crop, with the most decided advantages over the opposite plan of turning in the spring. But in this country where this solvent exists in such small amounts, a much longer time must of course be required to fit and prepare the food for plants from decomposition of vegetable matter. These facts derive confirmation from experience, and common observation. Sedge lands and all such as have lain at rest until densely covered, whether turned in or burnt over, scarcely ever yield a good crop the first year, even if prepared in the fall season, but if done in the spring the result is much more discouraging; the time at which the greatest benefits are to be expected from the turning in of vegetable substances, would seem to be when they had reached their highest point of development. Up to this period, plants continue to increase both in size and weight, both in respect to the amount of woody fibre and circulating fluids. But after it, and when vitality becomes extinct, progressive decline commences immediately, and a large portion of their most valuable component parts is, no doubt, removed by evaporation.—But even if the advantages to be derived from the turning in of vegetable substances were the same, whether done in the fall or spring season, the very decided improvement of the land from its open and porous condition, exposed to the action of the atmosphere, to the deeper penetration of the frosts, and freezing by intermediate layers of grass and weeds, furnish conclusive proof in favor of fall plowing.

From this view of the policy of manuring with vegetable matter, this theory of giving back to the land the materials nurtured in its bosom, the surpassing importance of the turning plow is at once perceived. It should be regarded as an inseparable auxiliary to the subsoil plow. Whilst one penetrates the substratum highly freighted with its latent mineral treasures, and exposes a vastly increased quantity of surface to the action of the atmosphere, the turning plow to the depth it penetrates, secures the same advantages, and superadds thereto, with a progress that distances all other expedients, an ample supply of vegetable mould, without which our mineral manures would be totally valueless.

The estimation in which I hold the turning plow in connection with the subsoil plow, as a means of improving lands, based, as I conceive it to be, partly on well established facts, and partly on the reason and nature of things, is such, that I am bound to regard it as the most important improvement of the age.—As one whose distinguishing usefulness consists in the fact, that it furnishes a ready means to all classes, even the poorest citizen, of manuring his lands without pecuniary outlay. Nor can the practical difference between the habit of shallow, and deep plowing, and turning in of vegetable matter be less decisive in its ultimate results. The man who plows deep, and uses the turning plow to incorporate the vegetable matter left upon his fields under a judicious rotation of crops, will enrich his farm without manure, whilst he who skims the surface will find all his exertions unequal to the task. The one is enriched by giving a philsophical direction to natural adjuvants and physical laws, whilst by the other, these advantages are studiously refused. The one draws the principles of fertility in a good degree from the atmosphere, the inexhaustible store-house of nature; the other ridicules these aids as absurd chimeras, found only in the brain of book farmers; and wastes his ill directed efforts in a vain attempt to supply his farm with its many wants by mousy nibblings at compost.—That the application of straw, corn stalks, husks, pea vine, corn cobs, et cetera, to our stables, stock pens and, barnyards is very highly remunerating, and absolutely necessary, to an enlightened system of economy, there can be no question.—but I am bound to believe that the turning plow especially in this section of the country, where lands are so cheap and abundant, and where an unusually large number of acres is cultivated to the hand, affords by far the most efficient if not the only means of improving whole farms, and that it may be made to answer the important purpose of reclaiming, and even fertilizing the great body of our waste lands throughout the whole country.

I have now given you my views, briefly in respect to the four prominent measures on which my hopes of reclaiming and improving the country almost en-

tirely depend. Fully convinced that the art of tillage is well enough understood to enable the farmer in this country, to make abundant crops, on rich land, I have confined my remarks, exclusively, to what I conceive to be our principal means of improving the soil. If adopted by you and put into practical application, their introduction will, in my humble opinion, make a most distinguishing era in our agriculturnl and commercial history. And your *Rail Road*, the legitimate pride and boast of your patriotism and public spirit, would be made to groan under the pressure of a double, triple or even quadruple amount of commerce, conveyed to our great southern market to fill your long pockets from its proceeds, and contribute to the support of the needy inhabitants of foreign nations.

[*Concluded in our next number.*]

From the Ohio Cultivator.

CROPS REQUIRE TO BE FED AS WELL AS ANIMALS.

In the first settlement of this country, the domestic animals found food growing spontaneously in the prairies and forests, and they lived almost entirely without the aid of their owners, As the country became more populous, and the animals had greatly increased, this spontaneous food became exhausted and they had to be fed by the hand of man.

When the soil was first reclaimed from the forest, the *crops* obtained *their* food for a number of years from the abundance of *vegetable* matter which had been accumulating in the soil, as well as from the inorganic substances which had been brought there by natural causes. But in a few years, by a constant drain upon the soil, without making any recompense, this spontaneous food which nature had provided, has become principally exhausted; and it is now as much the interest of the farmer to feed his crops as it is to feed his animals.

"I do feed my crops," says the *Practical Farmer*—"I haul out stable manure and straw, and I sometimes plow in clover, and put my land in first rate order before I sow my crops."

"Very well," says *Science*, "this is all right, so far as it goes, and I grant one in a hundred may do this; but I should like to be able to make this statement in 'inverse proportion,' that there shall be but one in a hundred who does *not* do it."

"But, Mr. *Practical Farmer*, there is another matter connected with feeding your crops that I wish to press upon your attention, which is this—It is as important to feed your *crops* with the kind of food *most suitable* to their 'digestive organs,' as it is that of animals. Did you ever think of this? We do not feed hogs on hay; neither do we give pork to our horses; but we are, nevertheless, careful to give *enough* to keep them alive, and to cause the animals to thrive and increase, and, at the same time, we avoid giving them so *much* as to surfeit or founder them."

"After all the pains I take," says the *Practical Farmer*, "I cannot raise good wheat; when I sow it on my land without manure, it is struck with rust; the berry shrivels, and I do not get half a crop. And then I go to carting on manure, and my wheat all goes to straw, falls down flat on the ground, and has no grain worth the trouble of saving; and so I turn my hogs into the field to get what few grains they can find. It is useless for me to try to raise wheat on my farm; it is either too rich or too poor. If I put manure the straw grows too rank, and it is too weak to stand up; if I sow without manure, the *heat* and *moisture* strike it with rust. I must go to raising some other crop."

"Stop neighbor," says *Science*, "here I have a book that will tell you something about raising wheat. I think it probable that you have been feeding your hogs on hay, or else you have been giving pork to your horses."

Prac. Farmer. Och, go away with your *book*. Do you think I want any of your *book farming* about me? I have been a *practical farmer* all my life, and in early times I used to raise the best wheat in the country, without *manure* or *books* either. Do you think that I dont know how to raise wheat?

Science. Will you read it?

Prac. Far. No it is so seldom I read that it is quite a task for me to read a book.

Science. Well, will you listen while I read?

Prac. Far. I have not time to stay long, but I have no objection to hearing you read a little; it won't *cost anything*, will it?

Science. If you will listen attentively, I will read you a few lines with pleasure: From each acre yielding 25 bushels of wheat, there is extracted from the soil, in the grain, 3.3 pounds of *potash*, and in the straw 0.6 of a lb.*

Prac. Far. What! does wheat contain potash?

Science. Yes. And the 25 bushels of wheat will also take from the soil in the grain, 3.5 pounds of *soda*, and the straw 0.9 of a pound.

Proc. Far. Ah! does wheat contain soda too?

Science. Such an acre of wheat will also take from the soil in the grain, 1.5 pounds of *lime*, and the straw 7.2 pounds.

Prac. Far. Oh, yes! I have heard of people putting lime on their land, but I never thought enough of it to try it myself.

Science. The 25 bushels of wheat also take from the soil, in the grain, 1.5 pounds of *magnesia*, and in the straw 1 pound.

Prac. Far. Why, I have heard it said that magnesia is injurious to crops, and that when farmers apply lime to their land, they should be careful to use that which does not contain magnesia! But go on; is there anything else in wheat? I can't stay much longer.

Science. In an acre of wheat yielding 25 bushels, there is in the grain 6 pounds of *Silica*, and in the straw 86 (eighty-six) pounds.

Prac. Far. Now I'm stumped! What on earth is *Silica*?

Science. The book says it is the substance of *flint* or pure *sand*.

Prac. Far. What! the substance of flint or sand in wheat! Pray, Mr. Science how does it get there?

Science. You know that sand can be melted, as is done in the manufacture of glass, by the application of heat with soda and other chemical substances; and this book tells us that it becomes soluble in water by the aid of the potash and soda before mentioned; and when thus dissolved, it is taken up by the roots of plants. But I have not yet gone through with the component elements of wheat.

One acre of wheat yielding 25 bushels, also contains in the grain, ¾ pound of *sulphuric acid*, and in the straw 1 pound.

Prac. Far. Why, that is oil of vitral, is'nt it.

Science. There is also taken from the soil, by 25 bushels of wheat in the grain, 0.6 of a pound of *phosphoric acid*, and in the straw 5 pounds: also in the grain, 0.15 of a pound of *chlorine*, and in the straw 0.9 of a pound. This is all, and you must remember these are not inorganic substances, such as do not grow like vegetables, and therefore they must be extracted from the soil. The total amount of these inorganic substances taken from one acre of ground yielding 25 bushels of wheat, including the straw, as it is usually cut by the cradle, is 120 pounds. Three fourths of this is silica, which is rendered soluble by the alkalies, potash, soda and lime, thus showing the importance of these substances in soils producing wheat.

"*Prac. Far.* Well, I declare I did not know that wheat had so many things in it. I always *thought* that wheat grew out of the ground, and got its food from the vegetable manure that was contained in it, or was put there by the farmer.

Science. Well, friend you knew before by sad experience, that vegetable manure *alone*, would not raise wheat; for you say that when you put manure on your land, your wheat all went to straw, which was so weak that it fell down flat on the ground, and had no berry in the heads; and when you sowed your wheat without manure, it was struck with the rust, and the grain shrivelled so that you got no more than half a crop. Now you see that this book has told you some things that you did not know before, and which perhaps you never would have found out by your own efforts, without calling in the aid of science.

Prac. Far. Well, if the wheat plant contains all these substances, and they are all extracted from the soil, how are we *practical farmers* to know when they are not present in the soil? and above all, how are we to obtain all this potash, and soda, and lime, and flint, and sulphuric acid, and phosphoric acid?

Science. The failure of your wheat crop for several years is pretty good evidence that *some* of these substances are wanting in the soil, but it will not decide

*Note—The weights here given are in pounds and decimal fractions, thus: 3.3 is three pounds and three tenths of a pound, and 0.15 is fifteen hundredths of a pound. It may also be remarked, that the language here used is not taken from the book alluded to by the writer; only the substance is obtained therefrom.

which. The only way to determine which one of the foregoing substances may be wanting, is to call in the aid of *science*, and have a correct analysis of the soil made. But, nevertheless, by the nature of the disease that effects the crops, we may be able to judge more correctly of the substance that may be wanting.—When the straw is weak and not able to stand erect, it may be certain that the alkalies are wanting to produce the silicates which are deposited in the stem, to give it strength and firmness. This book, however, will tell what substance you must procure and apply to the land, which will supply to the land, the ingredients contained in the wheat plant.

Prac. Far. I should like to hear something more about these matters.

Science. This book gives an account of the component ingredients of wood ashes. It says that "ashes always consists of a mixture in various proportions of carbonates, silicates. sulphates and phosphorates of *potash*, *soda*, *lime*, and *magnesia*, with certain other substances present in smaller quantity, yet more or less necessary, it may be presumed to vegetable growth." But they contain also, a greater or less quantity of imperfectly burned carbonaceous matter," of charcoal. Here you will perceive that you have nearly all the substances at once, of which the wheat plant consists. It would seem then, that if ashes be mixed with the soil it will supply the greater part of the substance of wheat. Did you ever think of this before?

Prac. Far. I have heard it casually remarked that ashes were useful sown upon wheat; but I never gave the subject much reflection, and therefore it did not strike me very forcibly. But does your book tell anything about the action of lime? I feel somewhat anxious to know this, for I have limestone on my farm and I have a mind to try it.

Science. Yes, this book gives an interesting account of the beneficial action of lime upon soils, and sums up its conclusions as follows:

"Lime improves the quality of almost every cultivated crop."

"It supplies a kind of inorganic food, which appears to be necessary to the healthy growth of all cultivated plants.

"It neutralizes acid substances which are naturally found in the soil, and decomposes or renders harmless other noxious compounds, which are not unfrequently within the reach of plants.

"It changes the inert vegetable matter in the soil, so as gradually to render it useful to vegetation."

Prac. Far. It appears then that lime is useful to vegetation in *other* respects than in furnishing this ingredient to the plant.

Science. There are a *variety* of other subjects described in this book which are usefully applied to vegetation, both in ameliorating the soil and in furnishing specific subsances to the growing crops. But it will detain you too long, I am afraid, to read all of these to you now.

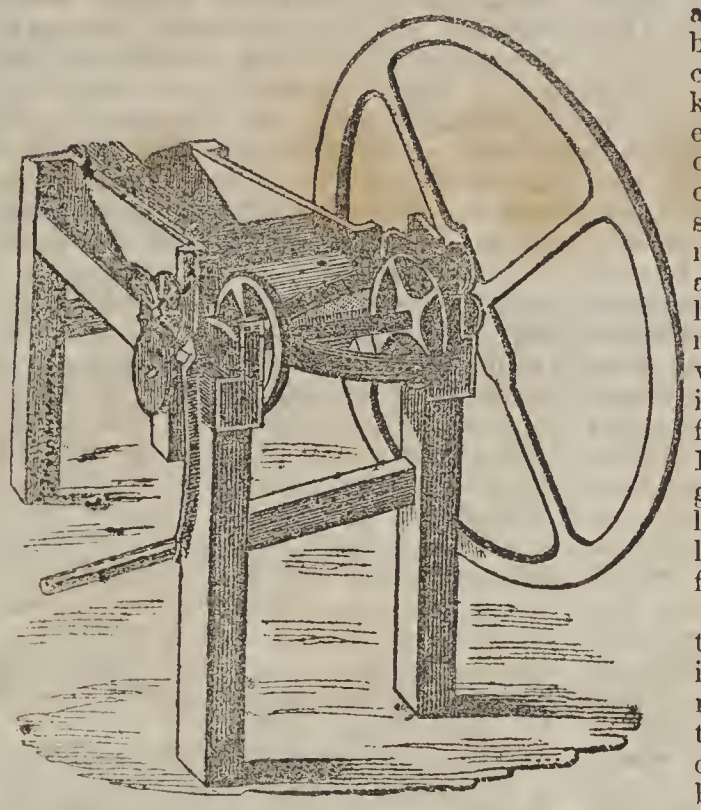
Prac. Far. That must be a good book for farmers I should think. What is the price of it? Where did you get it? I will certainly have to get me one.

Science. It may be had at most of the book stores in the state for a few shillings, and the title of it is, Lectures on Agricultural Chemistry and Geology, by James F. W. Johnson. D. L.

Mt. Talbot, Champ Co.

LIQUID MANURE.—The Chinese who are particularly skilful in the management of manure, are extremely careful not to waste the smallest portion; and, according to Sir Geo. Staunton, they prefer the dung of birds to that of all others, and next to that, night soil, which they apply in a liquid state.

CYLINDRICAL STRAW-CUTTER.



The knives in this machine are of spiral form, and act on a bed-steel in such a manner as to cut with great ease, without a very keen edge; many thousand bushels have been cut with them without sharpening the knives. They can be regulated to cut longer or shorter. This is one of the best machines in use for cutting hay and straw by hand. They are a heavy strong machine, and are much used at the South, by those who know the value of economy in feeding stock. There are four different sizes, having 9, 11, 14, and 20 inch knives. The larger sizes are rigged to be worked by power, and the smaller by hand. These machines are worth from twenty-five to thirty dollars.

There is great saving in the cutting of corn-stalks, hay, and straw, in two ways. The animals do not waste it by drawing it out of the mangers, and trampling it under their feet, and time and labor are saved them in masticating. They obtain their supply of food readily, and then lie down to digest it.—Fermentation also developes the nutritive matter, and requires less work for the stomach, and this by saving muscular exertion, leaves more strength with the animal to be expended on ordinary work. The same principle holds with milch cows, sheep, &c. If the food be given to them in a form more readily adapted to assimilation in the animal system, the greater the product of milk, wool, flesh, &c., they can yield from the same quantity. Cutting, bruising, grinding, fermenting, and cooking the food, all tend much to fit it for easy and rapid digestion, and whenever it can be thus prepared, without too much expenditure of labor it should be done.—By adapting a mixed food, much of the coarser products can be worked up, which are now suffered to be added to the manure heap. Indeed, scarcely any of the vegetable productions of the farm need be suffered to run to waste, till they have first contributed all the nutriment they contain to the support of animal life. By chopping these up fine, and properly cooking and seasoning them, they will be eaten with peculiar relish, easily digested, and go twice as far as the ordinary method of feeding.

Both hay and straw should be slightly wet, and seasoned with a little meal and salt, for several hours before it is fed to the stock.

UNDER DRAINING.

BY PROF. J. P. NORTON, OF YALE COLLEGE.

The subject which I have selected, as one of much interest to a large portion of the farming community is that of Draining. During a long residence abroad, my attention has almost daily been called to the drain, as in many situations the base of good farming. I have seen and admired the results of its introduction, in almost every part of Great Britain.—Since my return to this country, each district which I have visited has also reminded me of the drain, but unfortunately—of its absence, or extremely partial employment.

Drains in their various forms, are, as is well known, channels for conveying away water;—the first consideration that presents itself then, is—in what situations are these channels necessary? They are obviously so in marshy, swampy grounds; these cannot be managed at all without them. But there is a class of wet springy soils, sufficiently firm to walk upon or even to plow, which are frequently, in this country at least, considered dry enough. The grass grown upon them is sour and scanty, and all attempts at vegetation are imperfect; the soil is continually saturated with water, while the air obtains imperfect access; various noxious acid compounds are formed in consequence, and plants live with difficulty. The sun's rays warm such a soil very slowly, and it is only when the best part of the season is past, if at all, that it appraches to a proper state of dryness; When now the drain is introduced, it draws the water gradually away from beneath; the air follows from above, and comes in contact with all the noxious compounds which

may have formed; it decomposes them, and they become, in most instances, fit for the nourishment of plants. From the land in its wet state a constant evaporation was going on, which prevented the rays of the sun from their full influence; now there is no such evaporation, and the warm air can penetrate even into the subsoil.

The foregoing cases, are of soiis made wet by springs; these, however form but a small class when compared with those that are injured by retaining too much of the water that falls from above. In stiff clays these injurious effects are very manifest. During the whole early part of the season, they are saturated with water, and consequently cold; any attempt to work them only does mischief, by puddling the whole soil into a species of mortar. When the season is far advanced, the surface dries and at the same time becomes baked into clods, which are only broken up with very great difficulty and expense. But it may be doubted whether drains would have an effect on such stiff soils, whether the water would run into them. Their action first commences on that portion of the soil which lies next the sides of the drain; this gradually dries, and as it consequently contracts, innumerable little cracks are formed, through which the air obtains access to a fresh portion; this process goes slowly on, until at last the whole mass of clay within the influence of each drain continues perfect, though in some instances, they do not pervade the entire soil until at least a year after the drains are made. Some of the stiffest clays in England and Scotland, are now drained most effectually, and with great ease.—The full benefit of draining upon such clays is not by any means confined to making them dry. Air and moisture acting together, produce various chemical changes in the soil which gradually ameliorate its physical character; rendering it less stiff, and more easily pulverized. I have seen many instances where careful management, and thorough draining, have made wonderful advances toward the entire subjugation of the strongest clays that are ever cultivated.

It is not only on these stiff clays that a surplus of rain water is injurious. There are many soils in which—though dry at the surface, and to the ordinary depth of the plow, water always stands below a certain limit; this results either from the presence of a close retentive subsoil, or from the peculiar formation of the ground. Below the level, wherever it may be, there is no circulation; air cannot penetrate, and the same stagnation ensues of which I have before spoken, accompanied by the same hurtful effects. When the roots of the plant, pushing downward in search of food, come to this level, they stop; the instinct of nature forbids them to proceed in a direction where no proper nourishment is to be obtained; only a few inches of the surface therefore is available for their support, and unless that surface is very rich, the crops cannot attain to any great luxuriance. In time of drought, when this scanty surface soil becomes dry, the roots are forced to descend lower; but the substances which they unwillingly receive and convey into the circulation of the plant, are destructive to vegetable life, and if the drought continues long are fatal to the crop.

The summer of 1845, was extremely dry in many parts of Scotland; it was then found that in all ordinary cases, drained land withstands drought better than that which is undrained, because of the greater depth of soil available for the plant. During the season two neighboring fields of oats, near Inverness, were alike in all things except that the soil of the one remained undrained. The crop upon the drained field, continued fresh and green, though it did not of course yield so well as it would have done in a more favorable season. In the undrained field a large portion of the plants withered and died; this took place particularly in the hollows between the ridges, where they reached the subsoil first. The quality of the grain which did come to maturity was poor, and a subsequent comparison of analyses made upon samples taken from the two fields, showed a decided inferiority in that which was undrained.—It is now a proposition regarded among the best English and Scotch farmers as completely established—that drained land is not only better in wet seasons, but in dry seasons also.

There are sections where it is necessary to introduce drains, even where no excess of water is present. In some parts of England and Scotland, a deposit or band, of iron ochre and other injurious substances, is formed at various depths from the surface. This deposit is sometimes very hard, and of great thickness: it is of course, even when forming a layer of not more than an inch, an impenetrable barrier to the roots of plants. When broken up by the plow, it forms again at a somewhat lower level in a short space of time. The only method which has been found effectual, is to put in drains at the usual distances, as if to free the land from surplus water, and afterwards to break up the land with a subsoil or other plow. The rains then filter through the soil into the drain, dissolving the broken fragments and carrying away gradually the whole deposit. This action is more or less beneficial on all soils. Where a field has been long in cultivation, a hard layer usually forms immediately under the limit to which the plow reaches; this gradually becomes nearly impervious to the roots, but when once effectually broken up after the completion of drains, soon disappears. The depth of workable and profitable soil, is nearly as great as that of the drains themselves, and the farmer by increasing the available depth, increases his capital; for he augments the capacity of his land to bear good crops without exhaustion.—The manures which are applied upon the surface, are also much less likely to sink beyond the reach of the roots; even those parts soluble in water are almost all appropriated by the plant, or enter into some chemical combination in the subsoil, in passing through so greatly increased a distance before they escape. When undrained, land on the contrary, becomes saturated by the falling rain, the water still increasing, at last runs away along the surface, carrying manure and valuable soluble portions of the soil into the roads, or upon adjoining fields. The richest part of the land, the surface, is thus robbed of what constitutes a large portion of its value.

Before leaving this part of my subject, I may mention as proving the efficacy of drains in carrying off soluble deleterious ingredients, an instance which fell under my observation on the estate of Ballochmyle, near Paisley, in Scotland. The proportion of iron present in the soil was so considerable, as to be a serious injury. When drains were introduced, the quantity carried away was very great. In the soil it existed largely in a state called Protoxide of Iron; in this state it is soluble in water, but when it comes in contact with air, it immediately absorbs oxygen, (a species of gas) and becomes Peroxide, (or common iron rust;) in this state it is no longer soluble in water. When, therefore, the water from the soil charged with Protoxide of iron, entered the drain, and came in contact with air, the Peroxide was formed, and immediately settled down to the bottom as a red powder; it was so abundant in this case, that the drains soon become obstructed by it, and the proprietor was obliged to make openings at the upper end of each, for the purpose of introducing a powerful stream of water: this washed out the Peroxide of iron in large clots. It was necessary to repeat such an operation occasionally, as fresh quantities soon accumulated.

This is not the place to enter into many chemical details respecting the action of air and water upon the soil; the combinations which are broken up and entered into, would be too complicated, even in the present imperfect state of our knowledge respecting them, and too purely scientific for a mixed audience. I will, therefore, at once proceed to give some information as to the manner in which drains should be made, of what materials and how far apart they should be placed.

In many parts of New England stones are so abundant, that even the resources of walls, almost unexampled in magnitude, proves insufficient for their disposal. In such cases it may be advisable to employ stones for drains, even where other materials may be had at cheaper rates. Stone drains when properly constructed, are as durable as any others.—Smith, of Deanton, the great originator of the present system of thorough draining, says that the stones should be small, none much above the size of a hen's egg. The bottom of the drain should be about six inches across, and from six to eight inches in depth of these small stones should be thrown in. Turfs cut thin and very carefully, so as exactly to fit, should be laid on the top, overlaping each other, and the earth *rammed down hard*, as the object is to prevent entirely the access of water from above; it should all filter in at the sides, for if it finds an entrance at the top, sand and small stones will wash

down, and eventually choke the drain. On most farms in this section, a sufficient number of small stones may be found on the surface of the fields. If large stones are employed, the sides are much more liable to breaking, and such drains also become the resort of rats and mice, whose holes greatly increase the danger of obstruction. The water from a well made stone drain, should run nearly or quite clear even after a heavy rain.

Mr. Smith stated that he has them which have been in operation for twenty years, and have required, during that time, no repairs whatever. Where no small stones are to be found, it is necessary to break larger pieces with the hammer, as is practised in the making of macadamized roads, an operation which adds greatly to the expense.

To meet this difficulty, the expedient has been devised of making clay pipes.—These carry off the water effectually, and at the same time lessen the cost of the drain. The tiles first used were made in a horse-shoe form, each piece being about fourteen inches in length, and having a flat sole of corresponding dimensions to place under it, and prevent sinking in the soil, or undermining by currents of water. These were much more cheaply transported than stone, one load going as far as five or six, and the cost of digging was also considerably reduced; for the tile being only about 4 inches wide, occupies a bed much narrower than the stone. The several pieces of tile were joined together in the bottom of the trench, and formed a connected channel for water. The earth was compactly filled in, and the water found its way through the joinings of the pieces. These tiles were very effective, and have been employed to an immense extent in all the better cultivated parts of Great Britain and Ireland. Whole counties are now underlaid by them, and some of the most enormous incomes have been doubled by this simple improvement. At present, however, another form of tile is coming into general favor. It is a simple round pipe, made in lengths like the first, and for the cross drains of not more than an inch and a half in the diameter of the bore. These can be made much cheaper than the other kind, as they are smaller, and all in one piece. They are not more than half the weight of the old fashion tile and sole, and therefore an additional saving is effected in the transportation. The trench for their reception is also much smaller, being at the top just large enough to allow the trencher to work, and cut at the bottow with a narrow tool, to exactly the proper size for the reception of the pipe. The pieces being simply laid end to end, and wedged with small stones when necessary. The water finds its way in at the joints. Many have expressed doubts as to the operation of these drains, thinking that water would scarcely penetrate into so small a channel, through such minute appertures. No difficulty has been experienced in any case. One gentleman, residing in the south of England, who has employed these small pipe tiles in draining exceedingly stiff clays, laying them at the depth of three feet, and ramming the clay hard down, offered a premium of £100 to any person who would keep the water out of them. These tiles, of both varieties are made by machinery. The clay is worked in an ordinary pug mill, such as is used in brick making, care being taken that no stones are present; It is then forced through a die of a circular or horse shoe shape, according to the kind of tile intended to be made. It passes through in a continuous stream, which is cut off into the proper lengths by hand, or by a little apparatus connected with the machine. After drying sufficiently, they are burned in a kiln. By the use of machines, and by manufacturing on a large scale, the price of tiles has been brought very low. In some parts of England the round pipes now cost only ten shillings, or $2.50 per thousand, each tile being fourteen inches in length. This would make them only about 4 cents per rod. There is no doubt that should the demand be great, they may soon be obtained here at equally as low rates. I hope to receive in the course of a few weeks such information from one of my Scotch friends, as will enable me either to give directions for making the best tile machine, in this country, or for the importation of a small one from England as a model. If the farmers only call for them in great quantity, I have full confidence that our American mechanics will soon improve on the best English model that can be obtained. Even at $5.00 per thousand, or eight cents per rod, the employment of tiles would be cheaper than stones in most situations, unless they had to be transported many miles. It is moreover, much easier for inexperienced persons to cover them properly. In the Repository of Arts in this city, (Hartford, Ct.) are to be seen several of the horse-shoe shaped tiles; they are made, I understand, at Enfield, but there seems to be no soles accompanying them, and I do not know their cost. it may not be inappropriate to mention In this connection, the importance of such an institution as this Repository; it is now in its infancy, but if patronized as it ought to be, will become a place where models or specimens of such useful articles may be found,—a place of reference for all professions.

(TO BE CONCLUDED.)

EAGLE SELF-SHARPENING AND ADJUSTABLE STEEL-POINTED PLOW.

These have the same superior form and general construction as the celebrated Eagle-Plows, with the exception that the poin and share consist of two pieces, which are made on an *improved self-sharpening principle.*

The point, as shown detached at fig. 1, is simply a bar of *wrought steel,* about twenty inches long, which passes upwards into the body of the plow, where it is confined with one bolt, As it becomes shorter, and worn on the under side, it is readily moved forward and the under side turned up, thus always presenting a sharp point of *full length* and *proper shape;* when one is worn off five inches, the other end is placed forward and performs a like service. The wing or share, as shown detached at fig. 2, is made of either wrought iron with steel-edge or of cast-iron, and is also reversible, being used either end forward or either side up.

Both point and share are so simply constructed, that any blacksmith can replace them at trifling expense, or perpetuate the use of the original by new laying with steel, as they become worn.

There is a coulter of cast iron a little back and above the point, shown detached at fig. 3 forming part of a cap, shown detached at fig. 4, which protects the shin or forward part of the mould-board. It is confined in its place by the same bolt that confines the point and is cheaply replaced when worn. This is much less expensive, and in many kinds of soils quite as serviceable as a wrought coulter or cutter. They are sold with one or both, or with simply the cap.

These plows are particularly suited to Southern plantations, as the blacksmiths can easily repair them.--*A. B. Allen's Catalogue.*

CORN FROM SEED TWO THOUSAND YEARS OLD.—At the annual dinner of the South-west Middlesex agricultural Association, held on Friday last at the Adam and Eve Inn, Hayes, near Uxbridge, Mr. H. Pownall, of Spring, Grove, Hownslow, while eulogizing the farmers of Middlesex on their high degree of intelligence and practical judgement, produced a head of corn, which he said had been grown in the neighborhood of his residence, and as a proof of their meriting the eulogy he had passed upon them, stated that he had that day shown the head of corn to Mr. Sherbon, of Bedfont, who upon examining it, immediately said it was Egyptian corn, which Mr. Pownall said was the fact, as it had grown from grain found within the covering of an Egyptian mummy, within which it had been enclosed for upwards of 2000 years, a statement which produced a great sensation throughout the assemblage.—*London paper.*

Wheat was brought from the Central table land of Thibet, where it is original, yet it exists as a grass, with small mealy seeds.

Rye exists wild in Siberia.

From the Farmers' Register.

INQUIRIES AND REMARKS ON SALT, AS A MANURE, AND ESPECIALLY FOR COTTON.

"HAVE you seen a late English work, 'Johnson on Fertilizers,' in which he discusses some recent experiments in that country on salt as a manure? particularly in combination with composts, farm-yard manure or lime. They are so important that I am anxious to see them transcribed into your useful periodical. He is spoken of in the 'Library of Useful Knowledge,' as high authority, and if he is to be credited, salt would be a cheap manure at two dollars a bushel. Besides he recommends it so highly for destroying weeds if put on a season in advance of the crop, and for destroying worms and other insects infesting a crop, that I am desirous to see it in print, that experiments may begin extensively through this country. I should not be surprised from his trials, that a top dressing of a bushel an acre, sown over cotton in June, should destroy the worm which has so dreadfully consumed our crops in the south. At that season of the crop, the worm is burrowed about six or seven inches deep in holes made in the ground; and he informs us that worms in that situation are certainly destroyed by salt in small quantities thrown over the earth."

The foregoing extract is from the letter of a distinguished southern planter, whose name we are always pleased to present with his communication, whenever not forbidden by his order, as in the present case.

The essay of Johnson on salt as a manure would have been published long ago, but for our want of confidence in his opinions. Upon the desire expressed above, we shall take an early opportunity to publish either Johnson's own article, or his and other opinions on that subject, as given in the 'Farmers' Series' of the 'Library of Useful Knowledge.' The use of salt as manure has been frequently urged, upon the ground of great benefits produced by it in particular cases. It has as often excited the hopes and enlisted the active zeal of some theoretical writers, and again fallen into neglect, because of failure in practice. As a general practice, salting land for its fertilization, at any rate of quantity, has not been found advantageous or profitable. But, even if not a general fertilizer, or a fertilizer of soil at all, still it may be highly beneficial as a destroyer of predatory insects, (if taking care not to give so strong a dose as to injure the crop on the land—) and still more probably as a *specific manure*, or food essential for certain crops. The last opinion we have long entertained, and have before expressed it in this journal, as well as have published every known fact on this very important point. Many plants cannot grow except on a salt soil. There is no doubt that salt is a specific manure for asparagus, and there is a good reason to believe that it is also a specific manure for the very important crop, cotton. * * * * * *

It seems to us that salt must act as a specific manure for cotton, and is essential to produce the fineness of fibre that constitutes the value of the sea island cotton. As different as are the quality and appearance of this cotton from the green-seed, or short staple upland cotton, they are but varieties of the same kind, the most valued of which, rapidly runs into the other, by mere change of soil. The one kind is raised, in perfection, only on the low sandy islands on the sea coast of Georgia and South Carolina, and the adjacent shores of the main land. If the seeds (which are naked and black,) are planted in the interior, though but little remote from the sea, the product is what is called the "long staple Santee," a green seed cotton, but of longer fibre than the ordinary upland cotton, into which, however, continued planting from the same, finally brings the crop.

It has been supposed that the very sandy nature of the soil of the sea islands was the cause of the peculiar value of the cotton they bear. But if so, some spots, at least, might be found equally sandy, in the interior of the country, and the same kind of cotton be there produced successfully. But the accounts we have in the foregoing and other articles of the peculiar value of salt mud and salt grass, as manure for cotton, indicate plainly that salt itself is necessary for the perfection of cotton, and that it is owing to the salt already in the soil of the sea-islands, and adjacent low costs, that to such narrow limits the production of that valuable variety of cotton has heretofore been confined."

In what manner *specific manures* act upon the plants for which they are very important or essential, has not been satisfactorily explained in any case. The facts, however, are not the less certain, in the ascertained cases; and there may be as many other important cases, which have not yet been observed. Thus carbonate of lime, and in considerable quantity in the soil, is *essential* to the growth of clover. Gypsum (sulphate of lime) is another important specific manure for clover, but not as indispensable food, as other forms of lime. The acid of earth which is a poison to valuable crops, is indispensable food, or a specific manure, for sorrel poverty grass, and some kinds of pine trees—none of which can live after this acid has been effectually neutralized by manuring with lime. If then, though in a less essential degree, salt is a specific manure for cotton, it may well be that a very small quantity may produce important improvements to that growth, though no other cultivated crop might receive any perceptible benefit from a like application.

SOAKING SEED CORN.

As the time is now at hand when this most important grain is to be planted, let us look a little into the philosophy of saturating the seed with some fertilizing agent that will give it a quick start.—There are those who contend that by soaking seeds, and impregnating with some active fertilizers, they will yield without regard to richness of soil, or mode of culture. This like most other hobbies, has been "run into the ground," and many farmers take the other extreme, and ridicule the idea of soaking seeds or impregnating them with any fertilizing agents more than they naturally find in the soil around them. Now anything that will give corn a rapid, vgiorous and healthy start, will prove of great service to the plant, whether it increases the product or not, it will prove of great benefit in bringing the plant to an early maturity, thereby saving the risk of a summer's drouth. There is more nutriment for the growth of a stalk of corn, contained in the kernel from which it springs, than most persons ars aware of; from the decaying kernel shoots the upward stalk and the downward root, life springing from death. What the yolk of the egg is to the chick, the kernel is to the blade and the stalk. Who then can doubt the efficacy of impregnating the grains with some active fertilizing agent, that shall assist nature in making a vigorous start, and in coming to perfection, Guano water has been recommended to soak corn and other seeds in, but where this cannot be obtained, a solution of hen manure answers as good, if not a better purpose, as it is a most poweful fertilizer, and "varmints" will not molest the seed thus prepared. We have seen a field of corn when some four or five inches high, grabbled by pigs, for the grain on the roots, and although there was no apparent injury done the plants, they were stunted and barren in comparison with those stalks which were unmolested. Now if the decaying kernel give so much nourishment to the plant, how much more will it give when impregnated with a rich fertilizer. Corn soaked from twenty four to forty eight hours in a strong solution of hen manure, and rolled in Gypsum or good strong ashes, will nine times out of ten, mature earlier, and give a greater yield, than corn planted just "dry so." Try it, Planters it costs nothing to make the experiment, and may swell your fodder stack and fill your corn crib.

[*Columbus (Ga.) Enquirer.*

DESTRUCTION OF CATTERPILLARS.—Our readers are reminded that this worm should be attended to in season and when this is done the labor of extirpation will be trifling. Close attention to clear the limbs for one or two years will entirely rid an orchard of the nuisance.

One easy mode of destruction is to apply strong soap suds to the nest—if the tree is large a swab tied to the end of a pole will accomplish the purpose effectually. Suds which have been used by the washerwoman are as good as any, and by rubbing the swab on the nest—after it has been dipped into the suds—the worms are quickly destroyed.

BURDOCK leaves will cure a horse of the slavers in five minutes; let him eat about two leaves. I have tried it many times. My horses will always eat them when the slavers are bad—*Ploughman.*

Do not keep a horse too fat, or too lean, as either disqualifies him for hard labor.

The Farmer and Planter.

PENDLETON, S. C.

Vol. I., No. 2:::::::::: April, 1850.

JOHN C. CALHOUN AN AGRICULTURIST.

It is no purpose of ours to pronounce anything worthy to be called an enlegium on the life and charaeter of such a man as John C. Calhoun. As well might we attempt a description of the sun, or an estimate of the value of light. Of his genius, purity, and patriotism, his noble compeers of the Senate chamber have spoken, the world has read and responded in a manner signifieant of the profoundest admiration. In doing this they have but yielded obedience to the natural impulses of the heart, with no hope of adding an heur's duration to his memory, or inspiring a single new sentiment of respeet in the bosom of any one. His fame is now beyond the control of man; but the contemplation of his exeellencies, the recital of his many virtues, may not be unprofitable to those who are left yet a little while behind. It may then be fit in us to speak of him as we have known and seen him an agrieulturist at home.

And here as elsewhere he evinced his great superiority over the most of mankind. In his early years, though fired with noble aspirations to share in the honors of State affairs, he found time to indulge his taste and inclinations for rural pursuits. In the year 1815, together with other illustrious men of the State devoted to agrienlture, he was made an honorary member of the Pendleton Farmers' Society. For several years previous to that period, though a resident of Abbeville district he spent much of his time when out of publie business in this neighborhood. From this time till the close of Mr. Monree's administration, his attention was wholy cut off from agricultural pursuits. In the beginning of the year 1825, having purchased a plantation now well known by the name of Fort Hill, he determined to make it his permanent residenee, and indulge himself in the agreeable occupation of cultivating the soil. It soon beeame to him the beloved spot of earth. Already it was famous for its historieal reminiseences of Indian warfare. The god of nature seems to have formed it for its noble proprietor. Pieturesque and beautiful with its flowing Seneca, its fertile vale, its rolling hills and seqnestered groves, it was a fit retreat from the toil and excitement of publie life for such a spirit as his. To its natural beauty he added everything that art could bestow to improve it. During the intervals of the sessions of Congress, he was not less devoted to the interests of his plantation than to publie business when before him. He entered into all the minute details of husbandry with the same zeal and enthusiasm that he addressed a listening Senate. Earnestness was a part of his nature. In him was united the skill of experience and seience in no eommon degree. When at home, the plow and hoe moved nnder his own eye. When absent, every thing was eonducted by written directions and reported with scrupulous minutiæ. He was truly a model Planter, and acknowledged the great head of a eommunity embraeing some of the best Planters in the South. In the art of preserving the soil, in the use of guard-drains, with which his rolling lands are literally ribbed, in fertilizing crops, he was a beaeon light which we all have followed.

For more than twenty-five years he assembled with the Farmers of this region annually, semi-annually, and quarterly in the Farmers' Hall, now clothed in the habiliments of grief for the death of its venerated patron. For many years he was the presiding officer of the Society, and infused into its members a respect for the dignity of the employment of the Planter, and an ambition, fruitful of happy results, to promote the advancement of agriculture. Through this source, stepping down from his position of superiority to a level with the humblest, he endeared himself to his neighbors who, so long as man is just to himself, will hold in greatful remembranee a benefaetor that is no more.

Others whose peculiar province it is accord to him the highest eminenee as a statesman, we pay homage for his devotion to agriculture, not for the sake of the dead, but of the living.

Another week, and the last solemn rites of sepulture will be performed, and the remains of all that is mortal of our friend will have passed to their chamber of final repose. Henceforth, come what storms and changes may, Fort Hill and the name of John C. Calhoun will be inseparable, and a tour thither will be a fit pilgrimage for the patriot and the agrienlturist..

SUB-SOILING.

From what we have read on the subject, and from our own experience in sub-soiling, we conceive it to be our duty to urge strongly on our subscribers the necessity of subsoiling their corn land, *especially* the present season. It is not too late even now; indeed, we are of opinion, based on our own experience, that the *proper* time to subsoil for the present crop, especially on close, stiff land, is at the time the corn receives its first plowing--the subsoil to follow in the furrow of whatever other plow is used for that purpose. Land subsoiled in the winter is apt to run together again before summer, especially when we have as many heavy rains as have fallen the past winter and spring. We would therefore prefer, unless on sward lands turned down in the winter and which it is intended to cultivate superficially *only* so as not to break down into the reversed sod, subsoiling at the time above stated. In sward land, the subsoil should follow the turning plow. But some will say, we have no time to subsoil our land. Permit us to say to you however, that, in our humble opinion, you *have ample* time. If you have not time you are reaching too far, you are about to overcrop your force. And here let us ask the question, how many of our farmers and planters do over-crop themselves? one-half—three-fourths, or four-fifths? View the matter under all its blighting influences, such as over tasking---hard driving---prematurely wearing out the lands, horses and mules—diminished crops for the want of proper culture and certain deterioration of land for the want of time to make manure, &c. &c.—and then answer the question: Would it not be more prudent in us when pitching our crop, to calculate on working but five instead of six days in each week? Or, in other words, to drop off one sixth of the land set apart for the present operations? If so, we might subsoil our land, and drive our work before us instead of having it to drive us through the whole year, allowing us no time to make manure or to put and keep our fences in neat and creditable order.

We have had such a superabundance of rain through the last winter and spring so far, that we may resonably expect a dry summer to follow, and hence the necessity of making preparations to meet and counteract its effects. This, sub-soil plowing *will do*. We fear not any such drought as we have ever witnessed, provided our land has been properly subsoiled.

We no doubt have stronger faith in the use of the subsoil plow, than very many of our readers; but we have proved our faith by our works, and desire others to do the same. When we commenced writing this article we intended giving the result of an experiment made by us some three years since we think, an account of which was published in the Southern Cultivator, and most conclusively satisfied us, even if we had made no further experiments or heard nothing more on the great utility of subsoiling. And we might adduce testimony enough which we have at hand to fill our present number; but our article is already long enough.

A friend asks for a "receipt to make Vinegar without Cider?" The following we believe will do:

To 8 gallons of water, add 1 gallon of molasses, and a ½ gallon of spirits. Put into a cask, shake well a few times, then add a pint of good yeast or two or three yeast cakes. Keep in a warm place. In ten days slip a sheet of brown paper rolled up and dipped in molasses into the bung-hole. Cover the bung-hole with a piece of gauze or muslin until the vinegar is good, then close it.

For the complimentary notice taken of the first number of the Farmer and Planter by the Press generally in this State, Georgia, and Alabama, our thanks are due. Though not quite willing to appropriate to ourselves the full measure of ability as editers, that some have conceded to us, we are gratified to believe the feeling is very general that a paper like the one proposed in the Farmer and Planter is needed.

Should our subscription list run up to a reas-

onable mark, and we have great confidence that it will, no attention, energy, or expense shall be wanting on our part to make our journal inferior to none in the country, and suited in all respects to the wants of the South. Perhaps, as there is sometimes "something in a name," we ought to have called it the Southern Farmer and Planter, but that it is so, our readers will soon discover.

We have received two numbers of a paper called the "United State's Magazine of Useful Knowledge." recently established at Washington city, at $2 per annum. It is a quarto of sixteen pages and as its name imports is to be devoted to a variety of subjects, such as improvements in agricultural implements, mechanics, manufactures, the arts, &c. It is well gotten up and is a handsome sheet.

To Correspondens.—All letters, except communications for the Farmer and Planter, must be post paid to insure attention.

Original Communications.

MODE OF CULTIVATING COTTON.

Gentlemen:—I send you for publication in your journal, which promises so fair to benefit the agriculturists of the South, the mode adopted by Mr. Glen, of our District, of raising Cotton. And permit me here to suggest to the Farmers of our section, that the success of Mr. Glen for the last two or three years, has proven that cotton can be raised in this District, so as to remunerate them with nearly, if not equally as much nett gain as in any district in this State,—taking into the calculation the cheapness of living—the health and consequent increase of laborers and the general economy of our people.

The crop he made in 1849, I have not heard from. The crop of 1848, he made with three hands 27,000 pounds of seed cotton; and this, too, from 25 acres of land. Each acre making over 1,000 pounds. Making something over 17 bags of 400 each; or 6 bags to the hand, besides provisions enough for his family and stock.—His farm is all upland, lies on the North side of Three-and-Twenty Mile Creek, seven miles East of Pendleton, and was purchsaed by him some four or five years ago at, I think, $4 per acre, of Col. Hamilton.

On a visit to me some time the past year, he gave me his mode of preparing the ground, manuring, planting and cultivating cotton, which I will give pretty much in his own words.

He says it is more convenient to plant in the middles, but better to plant on the old bed.—When he manures, he runs a furrow on the old bed, puts in manure in the common way, throws two furrows on the manure and lets it lie till planting time. At planting time he breaks out the middle, which makes his ridges fresh again. But when he plants land *not* manured, he runs no centre furrow to bed on, but simply laps two furrows on an unbroken ridge—which he leaves hard—this he does early in the spring, and at planting time breaks out the middles as he does with land manured.

His planting time is from the 4th to the 10th April, which he does by making a slight furrow on the ridge with a small gofer. Then, after the seed are wet and rolled in ashes, he has them dropped in the furrow at the rate of two bushels to the acre—covers with a board having a notch cut in the centre and don't strike off.

So soon as the cotton is up so that you can see generally along the row, he runs around it with a plow, with a board so fixed as to throw the dirt away from the young cotton, and let the sun into the roots. Then, so soon as the third leaf can be seen in places he begins to hoe to a stand; and lets all other farm business wait till he gets his whole crop to a stand.

The third leaf is usually seen between the 10th and 15th of May, and by the last of May he has it all brought to a stand. If this be done by the last of May he thinks his crop pretty well made.

Thinning to a stand, he means to bring it all to one stock in a place, ten inches apart on poor land, fifteen inches on better, and twenty inches on rich or manured land. He is very particular to leave no more than one stalk in a place.

The first hoeing commences with the appearance of the third leaf, which generally will be about two weeks after the running round. This hoeing should leave no grass. In about a week after the hoes start the plows should follow, and with a mould board throw about as much earth to the cotton as the hoes have taken away. Then the buzzard follows and bursts out the middles. He continues working in the same way throughout the crop—that is, the hoes going before and the plows following, and lays by by the middle or 20th of July. He plants the white seed.

Respectfully your friend, R. F. Simpson.
April 10, 1850.

SOUTHERN AGRICULTURE.

Messrs. Editors:—I have received your first number of the "Farmer and Planter"—I hope it will be truly what its name purports, or what I have no doubt you intend it to mean.—I would have liked to have seen the word Southern prefixed, instead of being understood. There is something even in a name. But I pass on. We in the South have been strangely dependent in times past, on Northern and foreign sources for our books and newspapers. That state of things is rapidly passing away. The South is beginning to understand her position, her strength, and to know that she has abundantly the means of independance. Since my own recollection, 40 years ago, there were but two or three newspapers in this State. We have now, besides several in every city and town, one for nearly every village, and a new one is added every month or two. This is well—this is as it should be. But although these papers all devote an occasional column to agricultural subjects, this is not enough—we should have at least one journal devoted entirely to agriculture. This—and I rejoice to see it—you have undertaken to furnish—I rejoice to see it, among many other reasons, because we have been and still are too dependent on foreign sources for agricultural information. *Now the truth is, the South has peculiar institutions and peculiar staples, and must, therefore, have a course and agricultural practice of her own.* It is in vain to look abroad for help—it is folly. We must form an agricultural code of our own, and for that purpose we must consult with and "help one another." Instead of studying English and Northern rotations, which we cannot adopt, let us endeavor to find the one best suited to our own peculiar institutions, soil, climate and staples. Let England and the North raise turnips, wheat, and clover, potatoes, beans, and grasses—it suits them to do so. But let us of the South raise cotton, corn, small grain, &c., and endeavor to discover the rotations in which they should follow each other, with the least exhaustion of our lands, and let us endeavor to find out the best means of preserving our soils, and what are the best fertilizers within our reach, because it is nonsense to talk about lime, guano, poudrette, &c., in the interior of this State where they cannot be had at any reasonable price.

I say again, I rejoice that you have started your journal, because I hope and believe it will help to build up and establish, a Southern system of agriculture, *based upon and suited to our condition.* We can look no where abroad for such a system, we must find it amongst ourselves, and mainly by the help of ourselves. Around us are all the materials of greatness and independance, if we but knew how to use them. Teach us Messrs. Editors, and help us to teach one another.

Many seem to think because we cannot grow a bale of cotton, 50 bushels of corn, and 20 bushels of wheat to the acre, that therefore we are worse off than our neighbors in what they regard the more favored States. At a superficial glance this would seem to be; but it is not so in reality. If I had room, I could show there is some great fallacy here, and in some future number, I may undertake it. At present, I refer you to what your correspondent "T. B. B." says of the uncertainty of the cotton crop in Mississippi, and to the Patent Office Reports for the high price of lands, cost of preparation and manure, in the North where such large yields of grain to the acre are made. Then it will be seen that the cost of raising a bushel of wheat is 82 cents, and a bushel of corn 43 cents. Such a cost of production here, would leave a very small margin for profits. But the fact is, the cost of production here will be found on calculation to be very little more than half as much, owing principally to the cheapness of land and the lower price of labor.

What the South wants, Messrs. Editors, is the knowledge of a proper rotation or series of crops which, while it is profitable, will, at the same time, preserve and improve our lands—such a rotation must embrace cotton and exclude clover.

It is evident therefore that we cannot borrow such a system from abroad, but must find it among ourselves by careful and long continued experiments. This is the great desideratum of the South, and he who can establish it, will be entitled to her lasting gratitude. Laurens.

Product of Wool.—From a document just sent to Congress, it appears that the production of wool in this country, during the last year, was 70,000,000 pounds, valued at $25,000,000.

We take the liberty to publish the following article from the private letter of a friend who, we presume, did not design it for publication: we consequently give only initials of names.

We shall be pleased to receive, at all times, contributions for our columns, over his own signature.—Eds.

BOOK AND PRACTICAL FARMING.

Messrs Editors:—A good many farmers are waking up and beginning to think earnestly on the importance of manuring land, improving stock, and surrounding our homes with the comforts and luxuries of our own manufacture.—Science is not thought to be so great a bugaboo as it used to be—nor is the man now, who is found hauling leaves, chunks, weeds, and grass into his lots and stables—mixing composts—filling gullies, restoring old fields, and striving to cultivate a small plat of ground and make a great deal, thought to be altogether as great a humbug as the "man in the moon."

Book Farmers although still laughed at, are not *hunted down* because they read an Agricultural work. Some people can even begin to see some sense in their doings, and soberly ask themselves—"How does this fellow make so much off his poor land, and where does he get all his manure from?" I was talking the other day to a very simple minded neighbor about some experiment I had in view, when, with a smile on his face, he asked—"Col., do you go by what you read in books, or do you consult your own natural judgement?" I replied, "well I do both—that is, if what I read in the book strikes me as proper."

"Well, I never believed much in book farming," said he.

"Nor I nuther," re-echoed Sam ———, by the side of him, "I would n't give a dime for all the book larnin' in the world, about making truck."

"Now Sam, (I asked) who is the best farmer in all your knowledge?"

"Well, taking all things in consideration, I believe I'll give it to little Bob ———."

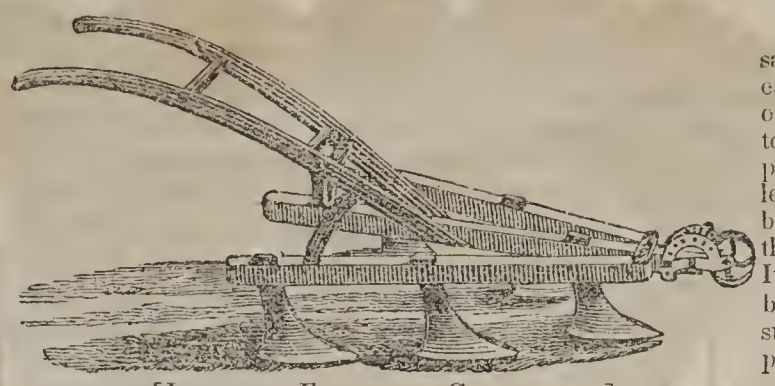
"Well, now, if you had a farm joining his, and were to plant the same seed, and work the ground just exactly as he told you he worked his, would n't you expect to be going right?"

"Zactly so, Colonel."

"Well then, if little Bob had to go away from home, and was to write it down plain as printing for you, would it make your truck grow any worse, or the grass grow any the more?"

"Well, I reckon not."

My friends were fairly hemmed and dropped the subject. R.



[Improved Expanding Cultivator.]

CULTIVATORS.

The Cultivator is a great labor-saving implement, for stiring the earth between the rows of corn and other crops. It is also well adapted to mixing manures in the soil, and pulverizing it after plowing. It leaves the soil much lighter and in better condition to receive the seed than when the harrow only is used. It is useful for covering grain sown broad-cast, and buries it at a more suitable and uniform depth than the plow, and in one-fourth the time; and much more perfectly than the harrow. There are various forms of teeth. Some enter and stir the soil deep; others are broad and flat, to skim the surface and cut up the weeds, while others are made with scarifiers or narrow teeth; and as all are made to fit the same size and form of mortice, by purchasing different forms of teeth, the farmer can use them in the same frame work.

They are made to expand and contract, to conform to the width of rows, &c. Some are made having the hindmost teeth so formed as to turn the earth toward the plants, and by shifting them from side to side, turn it from them as may be required.

The wheel is a late invention, and is found to be a great improvement, as it causes it to move steadily and easily, and assists the operator in getting around the ends of rows and obstructions in the field. They are kept for sale by A. B. Allen & Co., New York.

Re-Vaccination.—Every individual is susceptible of vaccination; re-vaccination is not necessary before puberty; the system undergoes the change at puberty, and re-vaccination is then necessary; vaccination is a sure preventative of varioloid; the system is susceptible of varioloid after puberty, whenever the individual is exposed to small pox without re-vaccination, but it is not necessary if the first operation was performed since purberty; those who disregard vaccination are always liable to small pox whenever exposed to that dreadful disease; if every individual were vaccinated before purberty, and re-vaccinated at the revolution of the system, there would be no such disease existing as the small-pox.—*Scientific American.*

FACTS FOR FARMERS.

It will not do to hoe a great field for a little crop, or to mow twenty acres for five loads of hay. Enrich the land and it will pay you for it. Better farm thirty acres well, than fifty by halves.

In dry pastures dig for water on the brow of a hill, springs are more frequently near the surface than in a vale.

Account should be kept, detailing the expenses and product of each field. When an instrument is no longer wanted for the season, lay it carefully aside, but first let it be well cleaned.

Obtain good seed, prepare your ground well, sow early, and pay very little attention to the moon.

Cultivate your own heart aright; remember that "whatsoever a man soweth that shall he also reap."

Do not begin farming by building an extensive house, nor a spacious barn, till you have something to store in it.

Keep notes of remarkable events on your farm.

Recording even your errors will be of benefit.

Good fences make good neighbors.

The better animals can be fed, and the more comfortable they can be kept, the more profitable they are, and all farmers work for profit.

Sow clover deep, it secures it against the drought of summer.

CORN FOR FODDER.

A correspondent of the Dollar Newspaper, in answer to an enquiry says:

"As to rasing corn for fodder, the time of sowing, time of cutting, manner of curing, &c., I would say my plan has been successful, but perhaps not the best. I will state it briefly: The land miserably poor; the last of May, or first of June, I sowed broad cast about 300 lbs. of guano and three bushels gypsum per acre. I then sowed two bushels of corn per acre, broad cast, with a two horse plough turned all in together, about 2½ or three inches deep; immediately after ploughing I rolled it with a heavy roller well; I then harrowed it two or three times over with a heavy harrow immediately after rolling. It grew from two to five feet high. On the 27th September, I began to cut; I got four bunches of stock about three or four feet apart, each way, where I intended making a shock, and tied them together in the manner usually adopted by those who usually cut unripe corn.—With a scythe I cut the corn down, holding the scythe pole high. By a quick stroke you will throw the tops of corn from you, so that it can be easily gathered and put up around the braces. Place it equally on each side, which will cause it to stand erect. Stand it up as streight as possible and have about 150 to 200 lbs. in a shock when dry. Take the stalk of a broom corn, mash it between the joints, and tie with it, so as to catch under the band at the top of the out-side corn stalks. Should the corn grow very short, place an additional layer around the top, before you pass the band around; this will act like the cape of a great coat. It is best to cut the corn when there is no dew or rain on the blades. Should the weather be very wet or damp and hot, examine your shocks, and if wet or likely to mould, remove the band, take down the corn, and an hour or two of sun and wind will dry them. Sometimes by opening a hole under the braces you can have a sufficient circulation of air to cure the fodder.—When the blades are dry you have but little to fear. Haul them as you use them. Do not stow or mow much together before Christmas if you do it will be very likely to heat and mould. My produce was 2½ to three tons per acre when cured.

When you see the fence down put it up, if it remains till to-morrow the cattle may get over.

HEREFORD COW, "MATCHLESS."

For the Farmer and Planter.

HEREFORD CATTLE, NO. II.

The beautiful cut which we give of one of the most symmetrical cows ever imported into America, is, as far as we are capable of judging with the naked eye, a most faithful likeness of that animal. We saw her at *Hereford Hall*, near *Albany*, in 1844, on a day when her capacity as a milker was submitted to the piercing eye of no less a judge than Daniel Webster, who, among his various transcendant qualities, is well known to the farmers of the Northern States, as one of the very best judges of neat cattle. Mr. Webster pronounced Matchless "*The best cow for all purposes*" he had ever seen. His scrutiny extended to every part of this *model* cow, and as his ungloved hand pressed her silken coat, and tried her flowing udders at the pail, a glow of honest farmer-like pleasure lighted up his swarthy face—the remembrance of the joys of boyhood seemed to have driven the vexed cares of the politician from his heart, and he stood among his brother farmers in the only capacity in which he has ever *been true to the noble attributes of his genius*—as "the farmer of Marshfield." Matchless, previous to this time, had carried off the highest prizes at the Smithfield show in England, and had been equally successful before the prejudiced Short-horn judges with which the State Agricultural Society of New York had been burthened. She was imported by Mr. Sotham, at a high figure, but we believe he has never been repaid for his enterprise, and the determination with which he set out, viz: of "having the best cow in England." Matchless, like all highly prized animals, died in 1845, and left but few of her progeny—but those few are of superb cast.

The illustration of the Hereford cow, bred by the Earl of Talbot, in Professor Low's Breeds of Domestic Animals, is before us as we write, and comparing the outline of that *picked* plate, with that of Matchless, we find it to be identical in every particular; remarking at the same time, that for symmetry and some of the boasted characteristics claimed specially for the Short-horns the latter excels the representation made as a model of this breed. We also take the liberty of testifying to the remarkable similarity of appearance displayed in this herd of Messrs. Sotham and Corning, which was so perfectly matched, that to a person unaccustomed to seeing, "the ring-streaked and speckled Jacob's cattle" of the country, it was difficult, even after and acquaintance, of weeks, to designate one particular cow from another. They all look alike, and are consequently a pure breed.

The Hereford cattle have not had a fair chance, even in England, and in this country the illiberality of a *clique* of Short horn breeders did all it could to drive them from before the breeding public.—The public, however, have the satisfaction of seeing this very *clique* themselves *driven out of sight in their own class, by the liberality and excellent skill* displayed by Mr. George Vail, of Troy who has made it his pride annually, to import one or more of the best Short horns from England, and who had the satisfaction, at one Agricultural fair of New York, to have the six highest premiums awarded to animals bred and exhibited by himself. We intend, so soon as we get through with the Herefords, to give our attention to true Short horns, such as are bred by Mr. Vail. The Herefords have suffered much from want of advocates, who had access to the public through agricultural journals and works.

As cattle for the tenantry, they were wide spread throughout the South and interior of England, but the Messrs. Colling brought out *the fashion* of the Short horn breed, which took like wild fire with the nobility and gentry of the country, and what was really the luckiest cross which ever happened in the world, fell into the hands of those who were able to spend thousands of pounds upon a single animal, and the result was the *establishment of that paragon of breeds*, "the true Short Horn," which will always be a favorite one with those who are able to bestow on them extraordinary care and extra food. It was different with the Herefords. They were in the hands of the small farmers and tenantry—who, like our own agriculturists of the present day, did not seem to understand the economical policy of giving an animal all it would consume, and turning its carcass into cash for re-investment, at the earliest possible age. Yet with all these disadvantages, without a trumpeter save the butcher and butter-maker, the Herefords held an even race with their pampered rivals, and since they have been taken up by those persons who manifest an interest in improving them, they have carried off a flattering proportion of all the premiums, wherever exhibited. Mr. Tompkins, who died about thirty years since, was the first improver of this breed. His exertions were cotemporaneous with those of the celebrated Bakewell, whose improved *Leicester breeds* of cattle, sheep, and swine astonished the world, After Mr. Thompkins, came Mr. Price; and latterly the Earl of Talbot, and the noble, generous and hearty-souled Earl of Warwick, have taken hold of them with a right good will. This last adoption of the breed will do much for it even in England, where ten to one of the Herefords still remain, in the hands of the petty, rent-paying, high taxed farmers, who can scarcely keep the thatch on the roof over them and straw in the manger. There have been no exhibition of "Hereford Oxen," or "Immense Hereford Heifers" bringing them before the public, and to secure attention to them. Their history is crammed away in a page or page and a half by Cully, Bailey, the Rev. Henry Berry, Loudon,

and that modern authority Youatt, who palmed a most disgraceful production, as far as the history of British cattle is concerned, on the "Society for the Diffusion of Useful Knowledge." We regret that it has been so extensively circulated in America, and were rejoiced to see it announced that "Louis F. Allen, in his celebrated history of Short horns has demolished Youatt's authority." Youatt was a pretender who compiled a book, the different accounts of breeds which it contained being written by interested breeders, and which is now banished from the countenance of English breeders, throughout the kingdom, by reason of its many errors and false statements. The only valuable portion of Youatt's is the Veterinary Department, which, however, is not so reliable as Clater's Cattle Doctor, with notes by John S. Skinner.

But with all the disadvantages of poverty in ownership and titled opponents, against whom they have had to contend, the Herefords have worked themselves into high favor and notice in England. Though not so quick as the Devons—they bring more weight to the yoke, and their proverbial docility makes them the best oxen to be found in the world. They are prized as hardy, well constitutioned, thrifty and profitable animals for all the purposes of the agricultural breeder, and must, sooner or later become as popular in America as they are valuable elsewhere.

It is true, the Herefords will not live on the wind, or sedge straw and sunny hill sides in winter, and a burnt up pasture in summer, and it is equally true that as long as we expect to convert these *almost intangible agricultural aids* into flesh, bone and blood, we will never be able to keep Herefords, or any other good breed of cattle. We want a breed of cattle which, by converting good food into flesh, butter and manure, will repay us for extra care bestowed upon them, We honestly believe that the Herefords will do this as certainly as any breed which now obtains, and looks forward to the day when they will at least stand on the same platform with their beautiful rivals the Short Horns, and then we can say "with a fair field and honest judges," we will ask no odds to ensure them triumphant competition. In our next, we shall abridge Professor Low's history and bring other claims of this bred to notice. A. G. Summer.

Ravenscroft, S. C.

Cures for Rheumatism.—The following are said to be good lotions for the evils of rheumatism. As they are simple they can at very little expense be fairly tried by those inflicted with those evils.

INFLAMATORY.

Half an ounce of alum, half an ounce pulverized saltpetre, put in half a pint of sweet oil.—Bathe the parts affected.

COMMON RHEUMATISM.

Take a pint of the spirits of turpentine, to which add half an ounce of camphor. When dissolved, rub on the part affected, and it will never fail of removing the complaint. Flannel should be applied after the part is well fomented with turpentine. Repeat the application morning and evening.—*Scientific American.*

What ought to be done to-day do it, for to-morrow it may rain.

Horticultural Department.

FRUIT AT THE SOUTH.

I presume the idea must have originated here, that our country was unsuited to fruits; but that idea even now exists to a greater or less extent, and consequently those who do attempt it make failure almost sure, and thus prove the hypothesis—at least to their satisfaction. But thanks to the inquiring age, the indomitable energy of some, and the light of agricultural periodicals, this matter is undergoing a vast change; and I hope, ere many years pass, that our whole country will be convinced that we have a fruit country, and that all of my countrymen will avail themselves of this great blessing. I look on fruits as peculiarly suited to our wants, and thinking as I do, I should be forced into the inference that our Creator had fallen short in his perfect work, if our climate was unsuited to the easy production of fruit.

In warm climates, fruit is conducive to health (ripe fruit of course), and if we could have it of a good quality, and in abundance, I think the scourge of our land, *fever*, would be more under our control.—In the first place, we all know that the bile formed in our system is secreted in greater abundance in summer than in winter, and I think if we would use less food that has carbon as its principle constituent, that we would be exempt from at least much of this increased flow of bile. Fruit is an article of this description; and requiring less carbon to keep our system in operation in the summer, with a great desire for this article, fruit, I think that we could with marked benefit use it freely, and to a greater extent than our northern brethren. I do not desire to enter into the subject more fully; it has been trenched on by many, and only add, that it seems to me, the oxygen in the fruit will combine with carbon in the system, and pass off harmless. You will therefore conclude I regard fruit as conducive to health, which I do.

I put it on another footing, as our pecuniary interest. All manner of stock will feed on fruit, and most of them will improve in condition; besides it will act on them as on man as to health—prevent disease. What number of hogs an orchard of 20 acres of good peaches and plums would keep in excellent condition from the first of May to the first of September or October, I cannot form an idea, but I know this much, that hogs in an orchard of the Chickasaw plum (common plum of all this region) will not come for call, and presume they would readily come for corn if this fruit was not to their taste. I think that acre for acre the same land will feed as well as if in corn; for if the orchard be cultivated as I deem it should be, plowed once every spring, and left till the fruit ripens, it will produce quite a pasture of crab-grass, which of itself will fatten stock. And yet another advantage, which is now no longer hypothetical; fruit is profitable to ship to New Orleans, and those who live within even 20 or 30 miles of the Mississippi river can make it profitable, tho' of course not so much so as if living nearer. I do not see any reason why we might not sell in New Orleans alone 200 to 500 barrels per day of choice peaches, beside a large quanty to the planters on the Mississippi, where steepage water prevents their growing peach and standard trees, to say nothing of Upper Mississippi and it tributaries. Understand, we can ship excellent fruit by the first of June, and some of the earlier varieties two weeks earlier—this is of peaches; our strawberries can be sent up and down early enough to pay us well, beside which, the travelling custom on the Mississippi is immense. We have therefore three good reasons if I am correct in the first; besides which I state the gratification of our own taste and that of our visitors, as well as the moral bearing. Who would think of offering his friend a glass, when he could place before him from the 15th of May to the 1st of October, the strawberry, melon, and peach, in season, and apples and pears, &c., all winter.

The peaches will grow here to perfection, equal to any point in these United States; who will affirm to the contrary? If any be found so hardy, and will come here, I pledge my head to prove to him he errs, and will go no farther than Hatch's or Lamberth's, or my friend Hebron's in Warren county. I have bought peaches in the Philadelphia market at 12½ cents each, and excellent they were. I was in that delightful city two years, and saw choice fruits of all kinds, and I do aver, that I never saw there a finer peach than I can show on this place in August. There has been shipped in one day, at Vicksburg, for New Orleans, on one boat, 200 barrels of peaches; this proves something.

Many persons rely on seedlings, and will not be convinced by the sad experience of some of us. Mr. Herbon has planted out not less than 1,000 seedlings, and I presume in the last twelve years I have done the same. What are they worth, with all our trouble? Both of us have budded to the sprouts, or tender limbs of over 90 per cent. of our seedlings, I guess, intending to cut down the trees of three to five years old; this shows *our* estimate.

Too many plant fruit trees on worthless land, for nothing else. This might do if they would remove four to six feet square of the clay, full three feet deep, and fill up the hole with earth from virgin soil or the woodpile, and then run a subsoil eighteen inches deep. I have never elsewhere seen nectarines succeed as well as in this country; I think they do equally as well as the peach. The raspberry of several kinds is very excellent. Summer and fall apples and pears do full as well, so far as our limited experience proves anything. The only difficulty is, your winter fruits transplanted here, ripen too soon for us; but I think time and experience will remedy this in our rearing winter fruits to suit our latitude. The quince I never saw finer; several varieties of the plum do well, and do not fail one year in fifteen. The fine plums, cherries, and apricots, have not been tested sufficiently to say anything for or against them. Of the latter I know some few gentlemen who say there is no difficulty at all. The grape will unquestionably succeed admirably. Think of sticking a cutting twelve inches long into the ground, and no more preparation; and yet many cut grapes from such culture. The fig—go South of us for the best, but not North of us for better.

The cultivation of fruits has as yet in reality

received no such attention as you Northern folks describe. We dig a hole some fifteen or eighteen inches square, about a foot deep, make the roots adapt themselves to this size, plant sometimes deep and sometimes shallow, owing to the ease of diggig the hole, and let it grow or not! This is truly about the amount of labor in planting our fruit trees. There are exceptions, I know, but this is the plan. We then plant corn, cotton, or grain, as it happens to suit, and grow our fruits. Is it in any wonder that we have not the rich, lucious fruit of the North?

But we had better stop here, for I have said enough at this time, which I trust most earnestly, will induce some readef of yours to try the cultivation of choice fruits in a correct manner, and I do this with the firm belief that he will succeed, and if influenced to do so by this article, that he will thank the columns of the American Agriculturist for this advice, M. W. PHILIPS.

Edwards' Depot, Miss.

Floricultural Department.

THE article below upon the arrangement of flowers in beds, as regards the importance of harmony of color, contains some useful suggestions upon the blending of shades, which are applicable not only to the garden, but to forming boquets and the tasteful selection of colors in dress. For allow us to say, that inasmuch as strict attention to good taste in this respect is by many persons supposed to be an evidence of delicacy of mind, it is not a matter to be disregarded. However superb may be each article of dress itself, if there is wanting harmony in the whole, our admiration is not excited. Much of this fitness and propriety depends upon suitableness of color and simplicity of arrangement, and as no attractions of beauty or display of mental attainment can compensate for the want of this fitness, it should engage the attention of all to a certain extent. We deem it, therefore, worthy the especial attention of our lady readers.—EDS.

ARRANGEMENTS OF FLOWER-BEDS.

M. Chevreul has demonstrated, in an ingenious essay upon the subject, that the contrast of colors is of the greatest consequence, whether for good or for evil; and that, if to dress a brunette in sky-blue makes her sallow, or a blanch in orange makes her ghastly, or a fresh-colored girl in white makes her red, so, to place discordant colors near each other, produces just as disagreeable effects, though not quite so personal, in a bed of flowers. We shall not, just now, fatigue our readers with the philosophy of this matter, for which we refer them to Carson, and other divinities of the toilet: it will be sufficient to point out what the gardening results are to which M. Chevreul's inquiries have led. he says, that what are called complimentary colors, always suit each other. Now the complimentary color of red is green; of orange, sky-blue; of yellow, violet; of indigo, orange yellow; and, consequently, blue and orange colored flowers, yellows and violets, may be placed together, while red and rose colored flowers, harmonize with their own green leaves.—White suits blues and oranges, and, better still, reds and roses; but it tarnishes yellows and violets. In all cases, however, where colors do not agree, the placing white between them restores the effect.—The following combinations are also said to be good,—orange yellow with pale blue, greenish yellow with deep rose, deep red with deep blue, and orange with violet; white suiting all these combinations more or less. On the contrary, we should always separate rose from scarlet or orange, orange from orange yellow, yellow from yellow green, blue from violet blue; and even red from orange, rose from violet, and blue from violet. Applying these conclusions to the dahlia, which is now about to be planted out, the following arrangement of colors is recommended. In lines, the following succession, viz: white, reddish scarlet, white, rose lilac, yellow, violet or purple, orange, white, red scarlet, deep purple, rose lilac, white, yellow, violet or purple, orange white, &c.

To produce the best effect in *patches* of seven arranged together thus,—

O O
O O O we may have
O O

1, six orange, with a purple or violet centre; 2, six purple or violet, with yellow centre, 3, six yellow, with a purple or violet centre; 4, six scarlets with a white centre; 5, six whites, with a scarlet centre; 6, six rose, with a white centre; 7, six blackish green purple, with an orange centre. These seven patches forming a straight border, may be then repeated in an inverted order, which would give thirteen patches, and there should be a patch of seven whites at each end. If the border is circular, without any central point of view, the foregoing arrangement should be repeated ad infinitum, without inverting the order after the seventh patch.

Another advantageous disposition would be the following:—

White. Pink. White. Orange. Violet. Yel.
O O O O O O
Pink. Yel. Whi. Or. Vio. Whi. Yel. Whi. Vio.
O O O O O O O O O
White. Rose. White. Orange. Violet. Yel.
O O O O O O
Scarlet. White. Bl. purple, White.
O O O O
White. Yellow. Scarlet. White. Pink. Bl. purp.
O O O O O O
Scarlet. White. Bl. purple. White.
O O O O

In this arrangement, violet may be substituted for purple. These are points that richly deserve the consideration of those who are now about to plant out beds of verbenas, pelargoniums, and other tender annuals, for they will be found to effect essentially the display of agreeable colors. It may be difficult to apply them at first, but the attempt should be made at once, and such notes prepared during flowering season, as will enable the principles to be carried out another year. In dressing and adjusting the stands of flowers in a florist's exhibition, the harmonious contrast of color can always be kept in view, and the importance of attending to the effect of complimentary colors observed advantageously. The ground color of such stands should be most especially consulted; and it should be remembered, that the nearer colors are brought together, the more decided is their mutual effect.—*Gardners's Chronicle.*

Housewife's Department.

NORTHERN AND SOUTHERN BUTTER.

The question is often asked, why we can not make as good butter South as they do North, and why our butter is so white and tasteless, more resembling lard than the rich golden butter of Goshen. The question is easily answered. We do not take the pains in the operation of butter-making that the less favored Farmers of the North do. Most persons think the whole art of butter making is simply the act of stirring up the milk so as to separate the butter*ous* particles from the water, and when the grains float upon the top, the butter is made; these people would scorn the idea of being taught how to make butter. Why say they, we were raised upon the farm, and have churned from infancy. Take the average price of country butter in the Columbus market and it will be about twelve and a half cents per pound, when a good article will as readily command twenty-five cents. Now we know it is as easy to make good butter here, as in any country under Heaven. We have seen neighbors whose cows came from the same stock, and fed in the same range, one could not dispose of his butter at any price, whilst the other found no difficulty in disposing of his at an advance upon the best Northern butter, Why is this great disparity? We will tell the good housewife the reason; they do not give the matter their personal attention. The greatest cleanliness is necessary in all the operations of butter-making, it is not enough that the milk vessels are washed, they must be scalded, sunned and aired. By following the few simple directions here given, the piney woods farmer may turn out as yellow, sweet, good butter as those of Goshen or any other country. When the milk is brought from the cow pen, boiling water should be provided to scald the pans which are to hold the milk, strain the milk into the pans as hot as the boiling water can make them, and as soon as the milk has turned churn it. Never place the churn in the sun, or add warm water to the milk to force the butter to come quick, this may hasten the coming of the butter, but it destroys that rich yellow cast, which it will be sure to have if churned cool. When the butter has properly come, take it up and wash it in clear, cool water, as long as any milk can be got from it, now salt it with good clean rock salt, (Liverpool salt will ruin butter, it has a tendency to soften it instead of hardening it) working it over as long as a drop of milk can be got from it, then place it away in a cool place over night; in the morning

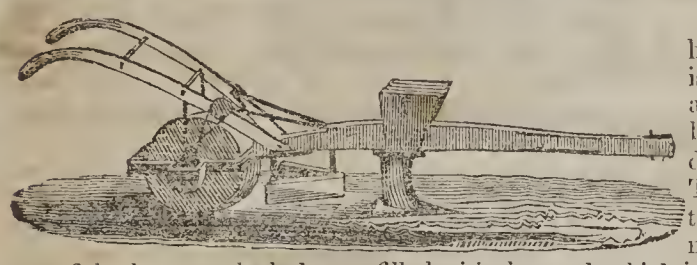
work it again, and continue the working until pure chrystal globules appear upon the butter; when these appear, it is butter indeed, and may be sent to any market with a full confidence of the highest market price. It is no doubt the system of churning in this section which destroys much of the butter, the above plan with patience and perseverance, will make as fine butter as can be made in the world.

[*Columbus (Ga.) Enquirer.*

To Bake Apples.—Take sour apples, those of keen acids, and to every square tin filled with them, pour over a tea-cup full of water, and one tea-cup full of sugar. Bake them slowly till done. Eat them with cream and the juice which cooks from them. No body knows much of baked adples who has not eaten them in this way. No quince, pear, peach or plum preserves are equal to this simple desert.

[*Scientific American.*

BACHELDER'S CORN-PLANTER.



This is one of the best machines we have yet seen for planting corn. The seed is put into the hopper above the beam, and as the horse moves along, the share below opens the furrow; the corn is then dropped by arms moving horrizontally.—These arms have holes that can be altered to a proper size for receiving any required number of grains, and as they pass in and out of the hopper, the holes are filled with the seed, which is dropped into a tube conducting it to the bottom of the drill made by the share, that is so formed that it passes under the surface at any required depth, where the grain is deposited without turning over the earth. A triangular iron follows to remove all lumps and stones, and a roller to compress the earth over the seed. The droping of the seed is always visible to the operator, and thus ensures his work being perfectly done. The arms are made to drop the corn nearer or further apart by different sized wheels fastened on the crank, moving the arms quicker or slower as required. The machine requires a small horse or mule to draw it, and with a boy to tend and drive, will plant from eight to ten acres per day, according to the width of the rows, and at any required pistance apart.—*A. B. Allen & Co.'s Catalogue.*

AGRICULTURAL INVESTIGATIONS.

Exercises of the mind, in reflecting upon the course of nature, and the processes of enltivation are of vast benefit. When the various crops in the field are matters of study, they possess a value and interest distinct from the amount of money they bring in. They become one's teachers; they give him lessons to be treasured up and used; and it is those only who seek to learn and benefit by these lessons, who really are intelligent and exemplary farmers. A few, by dint of unwearied toil, from year to year, and by a soul-pinching parsimony, may get money: and this, too, without any lessons, except a few brief ones which were inculcated by others while they were young. But those who stick to the old way, through thick and thin, and for no other reason than because it is the old way, are not good farmers; they are little more than common laborers, who by dint of porseverance get some money, but little else worth having. We are not ridiculing the old ways, but only saying they should be compared with new ones. That the old are, in many cases, the best, is undoubtedly true. It is only by comparing them, that one can satisfy himself fairly and properly, which path will lead him most directly to the desired object.

Is your corn best, when planted deep in the soil, or when put near the surface? Does the cornfield yield a better crop, when you spread all the manure, or whether you put it wholly or partly in the hill? Is it best to make large hills or small?—How many stalks should be left in a hill? How many hills upon the acre give the largest crop? Is it best to plant in hills or in drills?

For potatoes, is it best to spread all the manure? Or will you put it in the hill? If in the hill, will you have it below or above the seed? Are hills or drills best? Do you cut the seed, or plant it whole? Do you put the seed deep in the earth, or do you keep it near the surface?

Is grass seed best sowed with grain in the spring? Or will you sow it in August or September? Or will you seed down to grass with your wheat, whether in spring or in fall? Will you simply turn over your bound-out grass land, top-dress and put on grass seed? Which, of all these, is the safest or most profitable?

Shall your manure be plowed under the sod, or will you, after plowing, put it on the top, and harrow it in? Do you find the most benefit from it when you use it fresh from the barn, or when you let it ferment and pulverize before it goes upon the land?

These and a thousand other questions are disputable, and correct answers to most of them, you must learn, by observations upon your own lands or your neighbors. If we will but use our experience, and our common sense, in connection with books, we will find the books to be valuable aids.—*Maine Farmer.*

Useful Receipts.

BURNS.

Among the most numerous cases brought into the surgical wards of charity hospitals, every where, may be reckoned the injuries received by burns and scalds, which, when extensive, are too often fatal. In the treatment of these injuries we have had great experience and uniform success when the patients were brought in soon after the injury. No fatal case of recent burn or scald has occured in the hospital, although several have been extensive and severe. The universal treatment of all such cases is to cover the parts with wheaten flour, thrown over the wounds by a dredging-box, which, if thoroughly done so as to exclude the air, and prevent its temperature from reaching the suffering tissues, will afford instant relief from pain, and allay all that nervous irritation which is the chief source of immediate danger in all cases of extensive burns. We have had opportunity to test this ptactice in terrible burns occasioned by explosions of gunpowder, in scalds from the bursting of steam-boilers, in example of persons while drunk falling into the fire, and others in which their clothes were burnt off the body by the combustion of spirit gas, &c. In all these cases, and in some of them scarcely any portion of the body had escaped—and notwithstanding in a few of them, the integuments were literally baked, so that extensive and deep-seat-superation and sloughing were inevitable, and had afterward to be endured—the external application of the flour was in the first instance our only remedy, and this was continued for one or more days, while the acute effects of the injury demanded it. The superficial portions of the burns or scalds would often heal under this application alone; and the solutions of continuity, more or less deep, which remained open and discharging, were then dressed with lime-water and oil,* by means of a feather, to which creosote was added if the granulations were slow, or the sloughs tardy in becoming loose. Under this dressing the most formidable burns have been healed; and even when the face has been involved, there has scarcely been any deformity. In one of our patients, the face being horribly burned by an accidental explosion of gun powder, the grains of powder having been imbedded in the skin, very great apprehensions were indulged that the discoloration thus produced would permanently disfigure and deform the countenance. But, after the persistent application of the flour for three successive days, and until the tumefaction of the face and head had subsided, it was found that, with a few applications of the lime water dressing, the cicatrization was complete, and even the discoloration was removed.

If this simple remedy were resorted to in the severe scalds sometimes occurring from explosions of steamboat boilers, &c., there can be little doubt that the fatality of such burns would be very rare; while the popular and mischievous methods of applying raw cotton, oil, molasses, salt, alcohol, spirits of turpentine, sugar of lead water, ice, &c. to extensive deep burns, are, all of them, injurious, and destructive to life.

*We would prefer a salve made of spirits of turpentine, sweet oil and bees wax, to lime and oil.—Eds. F. & P.

To make Mutton Suet Candles in Imitation of Wax.—1. Throw quick lime in melted mutton suet; the lime will fall to the bottom, and carry along with it all the dirt of the suet, so as to leave it as pure and as fine as wax itself. 2. Now, if to one part of the suet you mix three of white wax you will have a very fine and to appearance a real wax candle, at least the mixture could never be discovered, not even in the moulding way of ornaments.

Boiling Potatoes.—An Irish paper gives the following direction for cooking potatoes. Put them in a pot or kettle without a lid, with water just sufficient to cover them. After the water comes nearly to a boil, pour it off, replace it with cold water into which throw a good portion of salt. The cold water sends the heat from the surface to the heart and makes the potato mealy. After they are boiled and the water poured off, let them stand on the fire ten or fifteen minutes to dry.

How to Enlarge Vegetables.—A vast increase of food may be obtained by managing judiciously, and systematically carrying out for a time the principle of increase. Take, for instance, a pea. Plant it in very rich ground, allow it to bear the first year, say half a dozen pods only, remove all others save the largest single pea of these. Sow it the next year, and retain of the produce three pods only; sow the largest one the following year, and retain one pod; again select the largest, and the next year the sort will have trebbled its size and weight. Ever afterwards sow the largest seed, and by these means you will get peas, or anything else, of a bulk of which we at present have no conception.

Marine Glue,—Dissolve 4 parts of India rubber in 34 parts of coal tar Naptha—aiding the solution with heat and agitation. The solution is then thick as cream, and it should be added to 64 parts of powdered shellac, which must be heated in the mixture till all is dissolved. While the mixture is hot, it is poured on plates of metal like sheets of leather. It can be kept in that state, and when it is required to be used it is put into a pot and heated til it is soft, and then applied with a brush to the surfaces to be joined. Two pieces of wood joined together with this cement can scarcely be sundered—it is about as easy to break the wood as the joint.

To Select Turkeys and Chickens.—Take with a small head, bright eyes, tapering neck, full breast, straight back, plump oval shaped body, with legs of moderate length. The signs of a good chicken are a plump breast, a thick, fat and flexible rump, and fatness under the wings. Old fowls should be boiled; the young may be either boiled or roasted, tho' the hen is prefered for boiling, and the cock for roasting. White flesh is preferable, though some think that a yellow-skinned chicken makes the most delicate roast.

Of the different varieties of the turkey, those of white plumage are considered the most delicate and tender. The signs of a good turkey are fullness of the muscles on the breast, thickness of the rump, the existance of fat under the wings, and flexibility of the hinder part of the breast bone.

Cure for a Felon or Whitlow.—Take the yolk of an egg, an equal part of strained honey; one table spoonful of spirits of turpentine, fresh drawn, one tea spoonful of spirits of camphor, mix well and thicken with flour to the consistence of thin paste, spread it upon the sore thinly and cold.

The above is from the Ohio Cultivator. It may be a most excellent receipt. The felon is an exceedingly painful thing.—The plan to cure it practised by the doctors is to put a lance into it.—*Scientific American,*

Biscuit Jelly.—Take of white biscuit, crushed beneath the rolling pin, four ounces; cold water, two quarts; soak for some hours, boil to one half, evaporate to one pint and flavor with white sugar, red wine and cinnamon to suit the taste.

[*Scientific American.*

Cut bushes that you wish to destroy in the summer, and with a sharp instrument—they will bleed freely.

CONTENTS OF THIS NUMBER.

TO POSTMASTERS.

There are thousands to whom the subject needs only to be suggested, who would subscribe to a paper devoted to Southern Agriculture at the low price of one dollar a year. Your public position as well as other causes make you, persons, frequently conferred with upon the merits of newspapers and public journals. Situated as you are at central points in every part of the country, you have opportunities to exercise very great influence for the general good. The Post office department at Washington, looking to public convenience, has by its decisions encouraged your kind offices to the Press. We therefore, respectfully, solicit that you act as agents in your neighborhood to procure subscribers for the "Farmer and Planter." We would willingly allow commissions, for money collected from subscribers obtained in this way, if we had any idea they would be acceptable.

SEABORN & GILMAN.

THE
FARMER AND PLANTER
Is published monthly at Pendleton, S. C.,
BY GEO. SEABORN & J. J. GILMAN,
Editors and Proprietors.

Terms.

1 *copy,* one year (*invariably in advance*) $1
6 *copies* one year, (directed to one office,) 5
25 *copies,* " " " " " 20
100 *copies,* " " " " " 75

All subscriptions must commence with the volume

☞ *Advertising and Job work, done on reasonable terms.*